Faculty of Business

The Effect of System Quality Attributes on the Intention to Use E-AgriFinance: Perspective of Agricultural Suppliers in Sarawak

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DECLARATION

To the best of my knowledge and belief this thesis contains no material previously published by any other person except has been made. This thesis contains no material which has been accepted for the award of any degree or diploma in any university. None of the reference and where due acknowledgement person's work has been used without proper acknowledgement in the text of this thesis.

Curtin University Human Research Ethics Committee has approved this thesis with the approval number HRE2020-0119. The survey has been conducted in accordance with the National Health and Medical Research Council National Statement on Ethical Conduct in Human Research (2007).

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ABSTRACT

The agriculture sector is vital to the fiscal and macro stabilisation of economy. It holds great potential to support Sarawak's economy as a whole. In adopting the goal of becoming the food net exporter by the year 2030, there have been massive efforts from the Sarawak government to improve Sarawak's agriculture sector. Achieving this agricultural transformation from the traditional way to the modern form is a significant challenge. To ensure the efficacy of changes, the Sarawak government provides support to the agriculture sector to work towards adopting modern technology. As a result, an e-AgriFinance mobile application will be implemented, integrating agriculture and finance functions in a single mobile application. This study aims to determine the relationship between system quality attributes and intention to use the mobile application from the perspective of suppliers. This study also examines the moderating effect of information and communication technology (ICT) readiness on the relationship between the system quality attributes and the intention of the use of the mobile application by the suppliers of the agriculture sector. In this study, two frameworks were adopted, the ISO 25010 system quality model and technology acceptance model (TAM).

This research adopts the quantitative approach to answer the research questions. Data were collected from the suppliers of the agriculture sector in Sarawak. The list of suppliers is obtained from Malaysia Pepper Board (MPB), Malaysian Palm Oil Board (MPOB), and Malaysia Cocoa Board (MCB). The geographical scope in this study involves a total of nine divisions in Sarawak: Kuching, Sibu, Bintulu, Samarahan, Sri Aman, Betong, Sarikei, Kapit, and Mukah. A total of 276 questionnaires were collected, and they were analysed using partial least squares structural equation modeling (PLS-SEM). All the analyses have been completed and the data supported six of the eight research hypotheses, except for the two moderating hypotheses. Perceived usefulness, perceived ease of use, perceived security and perceived maintainability were found to have positive impacts on the intention to use mobile application. However, the moderating variable, ICT readiness only moderates the relationship between perceived security and the intention to use mobile application, and the relationship between perceived maintainability and the intention to use mobile application. This research contributes to the body of literature by providing empirical

understanding and insights on system quality attributes of mobile application so that the agriculture sector suppliers will maximise the usage of the mobile application. The findings of this study helps the government, developers, policymakers, and the banking sector to create a comprehensive digital platform in the agriculture sector in Sarawak and beyond.

Keywords: agriculture sector, e-AgriFinance, suppliers, ISO 25010 system quality model, Technology Acceptance Model, ICT readiness.

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LIST OF ABBREVIATIONS

AVE	Average Variance Extracted
CI	Confidence Interval
CR	Composite Reliability
H	Hypothesis
HTMT	Heterotrait-Monotrait Ratio of Correlations
ICT	ICT Readiness
ISO	International Organizzation for Standardization
IQR	Interquartile Range
IU	Intention to Use
MCB	Malaysian Cocoa Board
MPB	Malaysian Pepper Board
MPOB	Malaysian Palm Oil Board
PEOU	Perceived Ease of Use
PLS-SEM	Partial Least Squares-Structural Equation Modelling
PM	Perceived Maintainability
PS	Perceived Security
PU	Perceived Usefulness
SEM	Structural Equation Modelling
SPSS	Statistical Package for Social Sciences
VIF	Variance Inflation Factor

CHAPTER ONE: INTRODUCTION

1.1 Chapter Overview

This chapter shows the research area and outlines the background of this study. It will then discuss the problem statement, research questions, and objectives of the study. After that, the scope of this study will be introduced as well as the research significance. Also, the definition of terms will be outlined. Next, the context of e-AgriFinance will be explained. Lastly, the thesis structure will be established.

1.2 Background of the Study

The agriculture sector in Sarawak is the new source of wealth for the state (Tawie 2019). At the same time, the agriculture sector is vital to guarantee food security, the advancement and improvement of socioeconomic, the growth of Sarawak, and even Malaysia in the aspect of economic and poverty reduction (Alam et al. 2012; Ahmed et al. 2016; Vong and Hui Then 2019). However, people who work and depend on the agriculture sector are mostly having much lower income than those who work in other sectors. Theodore Schultz claimed, "Most of the people in the world are poor, so if we knew the economics of being poor, we would know much of the economics that matters. Most of the world's poor people earn a living from agriculture, so if we knew the economics of agriculture, we would know much of the economics of being poor", (Schultz 1979; Cervantes-Godoy and Dewbre 2010; Meetoo 2011; Damian et al. 2014).

The Sarawak government provides different types of incentives, such as farm-level quality improvement, to increase agricultural value chain actors' income (Lim 2016). One of the reasons why farmers have a lower income is that Sarawak's agriculture sector is still based on traditional agricultural activities (Islam and Lamoh 2017; Hassan, Yussof, and Galadima 2019). The traditional agriculture activities can hardly respond to modern requirements over time (Choshin and Ghaffari 2017). Sarawak needs to promote precision farming that is compelled by technology as Sarawak's vision is to be a food net exporter by the year 2030 (Umpang 2019). It is also vital to transform the agriculture sector by linking agriculture value chain actors and facilitating financial transactions efficiently and effectively. Furthermore, one of the ways is to transform the agriculture sector from traditional methods to applying

modern technologies by adopting suitable electronic platforms for the agricultural value chain actors.

Developing an electronic platform for the agriculture sector is not new for many countries. For instance, India has its digital tools, which is the e-Kisaan tablets. The e-Kisaan tablet is a platform that has information on IT-enabled agriculture. The tablet acts as a platform among the suppliers to share information on fertilizers, pesticides, crop combinations, and even pest and disease outbreaks (Shivappa et al. 2018, 4). Also, suppliers are using the Internet of Things (IoT) technology to boost their productivity and facilitate operations in Taiwan (Elena 2014). However, Sarawak is relatively new to develop a platform that consists of electronics, agriculture, and finance. Therefore, it is good to develop an adequate and effective platform for the agriculture sector, specifically in Sarawak.

We live in an era where technology is advancing at an unprecedented rate. An electronic platform brings benefits in term of the ability to access knowledge as well as services (Stockdale and Standing 2004). One of the services that can be performed through the mobile application is the mobile banking. For instance, suppliers can gain access to formal financial services, including banking and loans which are often lacking (Sunga 2017). The question on whether these benefits can be sufficiently and effectively diffused to especially the rural suppliers and bring positive impact to the suppliers remain unknown (Devaux et al. 2018).

An electronic platform is becoming more and more complicated as time goes by (Boehm 2006). Thus, it causes the assurance of system quality attributes, such as usability and maintainability, to be more critical. System quality attributes has always been an interested topic in the software community since the 1970s. However, this study focuses on the agriculture sector of Sarawak, which has not been done. Taherdoost (2018) articulated that the system quality attributes of the platform affect the intention to use of users. It is also important to measure the intention to use because successful implementation of a platform depends on the users' intention to use and the use of the platform. Thus, this study investigates the relationship between system quality attributes and the intention to use mobile application. In this study, system quality attributes act as the independent variables and the intention to use acts as the dependent variable. Most of the existing literatures focus on the developed countries

and it may not be applicable to developing state such as Sarawak. This study investigates the system quality attributes of mobile application to be used by the suppliers of agriculture sector in Sarawak, which has not been done. This could possibly contribute to the Sarawak's government interest to digitalize the agriculture sector.

1.3 Statement of the Problem

Today, the agriculture sector in Sarawak is in crucial need of transformation. The agriculture sector was once the primary sector that contributed to the state's real GDP, which contributed as much as 45 percent (Hirnissa and Habibullah 2008). However, there was a drastic drop in 2018, where Sarawak's agriculture sector contributed 12.4 percent only to the real GDP of the state ("Sarawak Top Contributor" 2017). In order to maintain its competitiveness in the increasingly dynamic market, there is a need to refine the way the farming industry operates. The agriculture sector in Sarawak is still adopting the traditional method in the financial sector rather than using modern technologies such as mobile application (Islam and Lamoh 2017). Sarawak's agriculture sector is in the stage where there is a need to modernize the agricultural finance sector so that it can go to greater heights (Malaysian National News Agency 2016).

The Sarawak government has the initiative to go digital in the agriculture sector. They are adopting smart farming that involves ICT and digital technologies to transform and bring changes to the agriculture sector (State Service Modernisation Unit 2017). The technologies of smart farming include different aspects of precision agriculture and they can be categorized in data analysis, evaluation, data acquisition, and precision application technologies (Balafoutis et al. 2017). For example, IoT and sensor technology are implemented for smart farming. However, a digital platform that intend to integrate agriculture and finance sector is not available in Sarawak. This study focuses on the effect of system quality attributes on the intention to use e-AgriFinance, where this digital platform is developed to integrate the agriculture and finance sector. Relevant and adequate system quality attributes must be identified, as it affects the intention to use the platform (Franca and Soares 2015). Therefore, this study is in-line with the initiative of the Sarawak government to digitalize the agriculture sector.

Prior empirical studies used ISO 25010 model to examine the effect of system quality attributes on the intention to use mobile application for different agricultural stakeholders. This includes farmers (Echalar and Subion 2018), government (Ulman, Vostrovsky, and Trychtyr 2013), and distributors (Stusek, Kubata, and Ocenasek 2017), however research from the suppliers' perspective are under-explored. As a result, this study focuses on investigating the effect of system quality attributes on the intention to use mobile application specifically for suppliers in Sarawak's agriculture sector. Besides, prior studies used TAM to understand users' adoption of new technologies in the education sector (Lopez 2013; Robinson 2019), healthcare (Dhagarra, Goswami, and Kumar 2020; Suresh et al. 2016), and banking sector (Srivastava et al. 2013; Zaman et al. 2013) but it is scarce for the agricultural sector.

Furthermore, most of the existing literature focuses on modern agriculture needs in developed countries, which may not apply to the developing state, such as Sarawak, Malaysia. For example, in Europe (Ivonne et al. 2020), in Turkey (Akyuz, Cakirli, and Theuvsen 2020), and in Zimbabwe (Gavai, Masungwini, and Muganiwa 2018). Therefore, the model and framework developed in this study seeks to investigate the relationship between the system quality attributes and the intention to use mobile application for suppliers in Sarawak's agriculture sector. At the same time, no investigation has been done on how ICT readiness affects Sarawak's agricultural sector suppliers' intention to use the mobile application. In this research, the focus is also on how the moderator, which is ICT readiness moderates the relationship between system quality attributes and the intention to use the mobile application in the agriculture sector suppliers.

To summarize, the following research gap has been identified: -

- A digital platform that integrates agriculture and finance sector is not available in Sarawak.
- No model and framework that investigates the relationship between the system quality attributes and the intention to use mobile application for suppliers in the agriculture sector have been developed. There is no clear indication that the models proposed in the existing literature can be applied directly in Sarawak (a developing state)

- No investigation has been done on how ICT readiness affects the intention to use the mobile application of suppliers in the agriculture sector (Eke 2013).

1.4 Research Questions

This research seeks to address the following questions:

1. What is the relationship between system quality attributes of the e-AgriFinance and the intention to use mobile applications for suppliers of Sarawak's agriculture sector?
2. How does ICT readiness moderate the relationship between system quality attributes of the e-AgriFinance and the intention to use mobile application for suppliers in the Sarawak's agriculture sector?

1.5 Research Aims and Objectives

This proposed study aims to determine the system quality attributes of mobile application to be used by the agriculture sector suppliers in Sarawak. The objectives of this research are:

1. To determine the relationship between system quality attributes of the e-AgriFinance and the intention to use mobile application for suppliers of Sarawak's agriculture sector.
2. To investigate the moderating effect of ICT readiness on the relationship between system quality attributes of the e-AgriFinance and the intention to use mobile application of suppliers in the agriculture sector.

1.6 Scope of Study

This study is set out to focus on the agricultural suppliers in Sarawak, Malaysia. Sarawak is the largest state among the thirteen states, with an area almost equal to Peninsular Malaysia. At the same time, Sarawak has a large amount of land and is rich in natural resources. Therefore, Sarawak plays an essential role in Malaysia's agriculture sector as a foodstuff producer for the consumption of local community(Startup Borneo 2019). This study seeks to investigate the effect of system quality attributes of the e-AgriFinance mobile application on the intention to use the mobile application for suppliers in the agriculture sector in Sarawak. Also, this research aims to investigate the moderating effect of ICT readiness on the relationship between system quality attributes and the intention to use mobile application of suppliers in the agriculture sector. The geographical scope in this study involves a total of nine divisions in Sarawak. They are Kuching, Sibu, Bintulu, Samarahan, Sri Aman, Betong, Sarikei, Kapit, and Mukah. The crops selected in this study are pepper, palm oil, and cocoa.

1.7 Significance of the Study

Most prior studies focused on using financial technology in different sectors, but they seldom focus on the agriculture sector, where the studies on the intention to use mobile application of suppliers are scarce. For example, Easypaisa, a Pakistani mobile wallet, mobile payments, branchless banking services provider, and FinTech (financial technology) helps the healthcare industry in patient financing, managing unplanned medical expenses, and digital payments. This study is aligned with the interest of Sarawak's government to digitalize the agriculture sector, which is evident from the Sarawak Digital Economy Strategy 2018-2022 (Jabatan Ketua Menteri Sarawak 2018). A framework to determine the system quality attributes and how these attributes affect suppliers' intention to adopt the e-AgriFinance mobile application, specifically in Sarawak, will be included in this study. The use of digital finance in the agriculture sector of Sarawak will be included in this study too. Also, this study looks into the suppliers of the agriculture sector in Sarawak. Developing technology by creating a mobile application can bring significant impacts and changes for suppliers and national economic accounts. Financial transactions can be carried out in a much simpler and easier manner through the e-AgriFinance mobile application.

This study is significant in determining the system quality attributes of mobile application for suppliers in Sarawak's agriculture sector. This study also combines both ISO 25010 system quality models and the technology acceptance model (TAM). At the same time, this study includes ICT readiness as the moderator in the research model. This is to determine how it can moderate each system quality attribute with the intention to use suppliers in the agriculture sector of Sarawak. This study will provide helpful empirical insights into developing a mobile application that is suitable for the suppliers. The findings of this research potentially benefits the suppliers in the agriculture sector of Sarawak, the financial institutions, and Sarawak government as a whole. This is because the E-AgriFinance platform can support suppliers in handling agricultural finance, where the transaction can be carried out efficiently, and systematically (Kamran et al. 2016). The suppliers would be able to use the E-AgriFinance platform to connect to other agricultural value chain actors as well. When Sarawak's agriculture sector is doing well, it could even possibly boost the economy of the state (Malaysian National News Agency 2016).

1.8 Definition of Terms

The definition of terms used in this study will be discussed in the following section.

1.8.1 Perceived Usefulness

Perceived usefulness shows how users believe their work performance will become better if they adopt information technology (Kingery 2009). Also, when users use the specific application, their productivity, and the level of job performance will increase (Askool et al. 2019). In this study's context, this study will examine perceived usefulness by which the e-AgriFinance mobile application benefits the suppliers of Sarawak's agriculture sector.

1.8.2 Perceived Ease of Use

Perceived ease of use shows how easy it is for a user to use the technology (Kingery 2009). It also refers to how less effort is required from a user to use the technology (Stuti 2017; Askool et al. 2019). In this study, perceived ease of use is attained by the

ease to use of the e-AgriFinance mobile application, which positively affects their intention to use.

1.8.3 Perceived Security

Perceived security refers to the assurance for users to carry out activities, especially financial transactions. Security is a factor, which also acts as a barrier for the user to use mobile applications (Bhattacharya, Gulla, and Gupta 2012). In this study, perceived security is defined as how safe it is for the suppliers to use the e-AgriFinance mobile application.

1.8.4 Perceived Maintainability

Perceived maintainability shows how effective and efficient the developers revise and update the system product (Haboush et al. 2014). It may include the reinstallation of changes and improvements (Nanthaamornphone and Wetprasit 2018). Thus, the term "perceived maintainability" will be used in this study to refer to how well can the e-AgriFinance application be maintained, changed, and improved as time goes by.

1.8.5 ICT Readiness

In an information society, information systems' physical infrastructure is a relatively important component (Kordha and Ahmetaj 2011). Telecommunication infrastructures are one of the factors that affect the usage of mobile application (Asogwa, Ugwu, and Ugwuanyi 2014). In this research, the information and communication technology (ICT) infrastructure is to moderate the relationships between the system quality attributes and the intention of use of the mobile application by the suppliers of the agriculture sector in Sarawak.

1.9 The Context of E-AgriFinance

The term e-AgriFinance is derived from agriculture finance. It is used in this study to describe a digital platform that integrates activities related to farming which includes supply of input, production, marketing, distribution and financial services (Chan et al. 2015). E-AgriFinance mobile application is positioned in a way where it can serve as a solution that combines e-banking, e-wallet, e-marketplace, and e-governance all into one mobile application that agricultural suppliers stand to benefit from its adoption in the digital era. Financial activities such as savings, loans, and transfers are included in the financial services (Sebatta, Wamulume, and Mwansakilwa 2014). Furthermore, government investments such as grants, rebates, and reward loans can also be accessed by the agricultural suppliers themselves at their fingertips. This is particularly useful given that some of the suppliers are located at rural areas. At the same time, suppliers can access this application at their convenience and connect to the farmers, distributors, and government without the need for middlemen. In short, the business operation of suppliers can be done through smartphones. Digital technologies are getting more and more involved in our daily lives. It transforms how people, businesses and even governments work, bringing important benefits by reducing costs of information and transactions (The Digitalization of Agriculture 2020). The initiative to develop e-AgriFinance mobile application is aligned with the initiative of Sarawak government to go digital, where agriculture sector can go greater with the Internet. In brief, the e-AgriFinance mobile application benefits the supplier by enabling the suppliers to gather information regarding the market prices, agricultural activities, and enabling suppliers to access the agricultural finance services (Emeana, Liz, and Katharina 2020).

1.10 Thesis Structure

This thesis is composed of five chapters. The first chapter discusses the fundamentals of the research. This consists of introducing the study, problem statement, research questions, research aims and objectives, the scope of the study, research significance, the definition of terms, and the context of e-AgriFinance.

Chapter Two begins by providing a comprehensive literature review on the information system, the role, and its importance. Then, the chapter discusses the system quality models, which include McCall Model, Boehm's Model, FURPS Model,

Dromey Model, ISO 25010 Quality Model as well as Technology Acceptance Model. Both ISO 25010 Quality Model and Technology Acceptance Model is the underpinning theory of this study. Also, this chapter makes a comparison of the system quality models. Following on, the variable intention to use mobile application is discussed comprehensively. Next, this chapter discusses the system quality attributes of mobile application as well as the importance of system quality attributes. Perceived usefulness, perceived ease of use, perceived security, and perceived maintainability are the variables studied regarding its relationship to the intention to use e-AgriFinance mobile application, where ICT readiness is the moderating variable. Furthermore, the conceptual framework and hypotheses development of the study will be discussed in this chapter.

Chapter Three concernes the methodology used for this study. This study discusses the existing research designs. The adopted research design is the quantitative approach and the rationale of the choice of methods. Next, the chapter discusses the sample size, sampling techniques, data collection methods, the questionnaire, the instruments used, the data analysis technique used in this study, and the ethical clearance.

Chapter Four analyses and discusses the findings. The chapter will discuss the undertaken procedures to analyze the data collected in this study. Data preparation and descriptive statistics were done using SPSS 25.0 statistics, and the results were recorded. Then, the measurement model analysis and structural model analysis were done using SmartPLS 3.0. The results of the analysis were recorded and discussed accordingly. The chapter also discusses the results concerning its consistency with past studies. Then, this chapter presents the summary of how the research questions of the study were answered. Lastly, the theoretical and managerial contributions of this study will also be discussed.

Chapter Five presents the conclusion of this study. Finally, the chapter concludes with the limitation of the research and provides recommendations for future study.

The overall structure of the study takes the form of five chapters, including Chapter One, the introduction, Chapter Two, the literature review and hypotheses development, Chapter Three, the research methodology, Chapter Four, the data analysis, results, and discussion, and lastly, Chapter Five, the conclusion.

1.11 Summary of the Chapter

This chapter started with the background of the study, followed by the problem statement, research questions and research objectives of the study, the scope of the study, the significance of the study, the definition of the terms used in this study, and the context of e-AgriFinance. Lastly, the chapter discussed briefly the thesis structure.

CHAPTER TWO: LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1 Chapter Overview

This chapter reviews areas including an overview of the information system and its roles, the system quality models, along with the theories guiding the study ISO 25010 system quality model and technology acceptance model (TAM), the dependent variable intention to use mobile application, the independent variables system quality attributes of mobile application. This chapter then ends with the conceptual framework of the study and hypotheses development.

2.2 Information System

Boell and Cecez-Kecmanovic (2015) described information systems (IS) according to four views of which the definitions are: (a) technological views, which include the data processing, storage of information, and transformation of data; (b) social views, which emphasize IS as social systems; (c) socio-technical views, which argue both social and technological components are interrelated in IS; and (d) process views, a working system which includes capturing, transmitting, storing, retrieving, manipulating, and displaying information.

Information systems are commonly used in different sectors all over the world in the 21st century. Besides that, information systems are the backbone for most sectors. This includes the banking sector, government sector, healthcare sector, retail sector, and finance sector (Bhatnagar, Kumar, and Gupta 2016, 151). Work processes are longer and more tedious if there is no involvement of information systems. With the support of information systems, information and data can be stored and accessed easily, problems can be managed better, and cost can be reduced efficiently (Chang and Lin 2016). The mobile application allows users to easily access updated and reliable information (Dimond et al. 2016). This is why information systems are commonly used nowadays.

The importance of digitalization is growing in recent times. Adopting information systems and information technologies as communication channels has caused governments to consider electronic-based services (Chiang 2014). That being said, Sarawak is suitable to adopt information systems and bring changes to the agriculture

sector. It is time to apply modern technology in this era, merging the information and communications technology, and connecting the farmers and suppliers in the Sarawak agriculture sector (Department of Agriculture 2019). With the introduction of mobile application, it can be a feasible tool and has the potential to revolutionize the agriculture sector (Dimond et al. 2016). The information system needs to be involved in Sarawak's agriculture sector to improve finance and the industry itself. This is particularly important for Sarawak's agriculture sector to maintain itself as a competitive hub and a key frontier industry for Sarawak (Lau 2018).

Developing a suitable platform such as a mobile application for the agriculture sector in Sarawak could help different agricultural value chain actors. This includes farmers, suppliers, distributors, and the government. System quality models will be discussed in the following section.

2.3 System Quality Models

There are a few system quality models that will be discussed in this section. They are McCall Model, Boehm's Model, FURPS Model, Dromey Model, ISO 25010 Model, and Technology Acceptance Model.

2.3.1 McCall Model

McCall introduced the first system quality model in 1977, defining 11 quality factors characterizing system products (Motogna et al. 2016). There are three different categories in the structure of the McCall model, which include product operation, product revision, and product transition (Jaradat, Weheba, and Kanan 2015). Every type of system quality's attribute comes with quality attributes (Musa and Alkhateeb 2013). Product operation shows to what extent the product can understand and operate efficiently in delivering satisfactory results to the users. It is also referred to as the capability to provide results that meet the user's expectation (Ortega, Perez, and Rojas 2003). The category of product operation includes a few sub-characteristics. They are modifiability or correctness, reliability, efficiency, integrity, and usability (Suman and Wadhwa 2014). Product revision refers to whether the mobile application can be changed and tested according to the requirement. Testability, flexibility, and maintainability are the sub-characteristics of product revision (Reddy, Prasad, and

Murthy 2017). Product transition refers to distributed processing and hardware (Rawashdeh and Matalkah 2006). This includes portability, reusability, and interoperability. These are the characteristics of the McCall model.

With all the characteristics mentioned above, there are shortcomings of the McCall model. The McCall model contributed to creating the relationship between quality characteristics and metrics (Behkamal, Kahani, and Akbari 2009). However, there are criticisms saying not all of the McCall model metrics are objective, as many are subjective. Simultaneously, as one of the important system qualities, functionality is not considered in this model (Ortega, Perez, and Rojas 2003; Rawashdeh and Matalkah 2006).

2.3.2 Boehm's Model

Boehm's model was introduced in 1978 by Barry W. Boehm, based on a hierarchical composition of characteristics. This model qualitatively describes the system quality as a group of attributes and metrics (Musa and Alkhateeb 2013). The general utility is at a higher level, and it is separated into a set of factors, followed by different criteria (Jaradat, Weheba, and Kanan 2015). The general utility consists of portability, utility, and maintainability. The utility is then separated into reliability, efficiency, and human engineering. Moreover, maintainability has sub-characteristics of testability, understandability, and modifiability (Ortega, Perez, and Rojas 2003). Considerations are also included in the evaluation of system products regarding program utility.

One of the advantages in the Boehm's model is that it includes characteristics of hardware performance that are missing in the McCall model (Rawashdeh and Matalkah 2006). On the other hand, a shortcoming of the Boehm model is that it does not suggest ways to measure the system quality characteristics (Rawashdeh and Matalkah 2006).

2.3.3 FURPS Model

The FURPS model was developed in 1992 by Grady and Caswell. There are five characteristics of this system quality model. This includes functionality, usability, reliability, performance, and supportability (Jaradat, Weheba, and Kanan 2015). Functionality consists of features sets, capabilities, and security. As for usability, it includes human factors, user interface consistency, documentation of user, and training materials. Reliability refers to the ability to recover, accuracy, and mean time between failures. The performance introduces conditions on functional requirements such as accuracy, efficiency, speed, and response time. Testability, adaptability, compatibility, and serviceability are included in supportability (Suman and Wadhwa 2014).

This model has two different layers, which are the system quality characteristics and their associated characteristics. The characteristics are separated into two groups, which are functional and non-functional. They are to evaluate the system quality and postulate product requirements (Jaradat, Weheba, and Kanan 2015). Functional requirements relate to the input and expected output, while non-functional requirements refer to usability, reliability, performance, and supportability (Rashidi and Hemayati 2018). One of the FURPS model's drawbacks is that this model does not include portability as its system quality. Also, security as one of the main system qualities in this research is not included. Thus, this model is not adopted in this study.

2.3.4 Dromey Model

The Dromey model was introduced in 1995. This model's framework consists of four quality categories, namely: correctness, internal, contextual, and descriptive (Musa and Alkhateeb 2013). All four categories share similar system quality attributes. Correctness has quality attributes of functionality and reliability. As for internal, it includes maintainability, efficiency, and reliability. On the other hand, the sub-characteristics of contextual are maintainability, reusability, portability, and reliability. Descriptive has quality attributes of maintainability, reusability, portability, and usability.

This model aims to raise the understanding of the relationship between system characteristics and sub-characteristics. Moreover, Dromey's model seeks to acquire a model capable of working for systems from different perspectives. This model

involves both the static and dynamic aspects (Rashidi and Hemayati 2018). This is because different products have different evaluation processes. However, this model's shortcoming is the absence of criteria for system quality measurement, which is similar to the Boehm model (Behkamal, Kahani, and Akbari 2009). Therefore, this model is not adopted in this study.

2.3.5 ISO 25010 Quality Model

The International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC) form a specially designed system worldwide and international standardization. ISO 25010 is an extended version, which replaces ISO 9126 (Izzatillah 2019). According to an international standard, ISO 25010 defines the quality of the system from two different perspectives: product quality and quality in use (kadi et al. 2015).

The ISO 25010 model can be used to evaluate systems from a different point of view related to requirements, use, evaluation, development, and quality assurance (Haoues et al. 2017). Product quality is referred to as internal and external quality models by ISO 25010 (Moturi and Mbiwa 2015). This model classified product quality attributes to a total of eight characteristics: functional suitability, reliability, performance efficiency, usability, security, compatibility, maintainability, and transferability (Rafique et al. 2012). On the other hand, quality in use refers to the user's view towards the system product's quality when used (Adewumi, Misra, and Omoregbe 2015). This model classifies quality in use into five different characteristics. They are effectiveness, efficiency, satisfaction, freedom from risk, and coverage of context (Rafique et al. 2012).

In this study, the focus will be on product quality, which is the mobile application quality. According to prior studies, some are limited to only one quality characteristics while some studies covered more than one characteristics (Haoues et al. 2017). In order to have a parsimonious and economic model, only two of the suitable characteristics of product quality will be adopted in this study, they are security and maintainability. Quality in use will not be included as the e-AgriFinance mobile application is not developed yet.

Security includes confidentiality, authenticity, accountability, non-repudiation, and integrity (Adewumi, Misra and Omoregbe 2015). The mobile application should take full responsibility of safe and secure transactions to safeguard the information provided by the user (Bhattacharya, Gulla, and Gupta 2012). Security refers to information being protected, and each individual has access to their information according to their level of authorization (Fath-Allah et al. 2018). Besides, confidentiality is needed where the users' private data and information should not be accessed publicly (Acharya and Sinha 2013). Perceived security is one of the important system attributes in this study because it involves financial transactions. The mobile application must have confidentiality and integrity. Only authorised users can access the data. Also, data stored in the system is protected from flowing out of the system (Xu, Heijmans, and Visser 2013).

Maintainability has several sub-characteristics, which are analysability, reusability, changeability, testability, and stability of modification (Kadi, Idri, and Ouhbi 2016). It also refers to how visible and modifiable the mobile application and its function can be (Fisher et al. 2016). Maintainers may include some areas of modification, which include reinstallation of changes and improvements (Nanthaamornphone and Wetprasit 2018). Perceived maintainability is also one of the independent variables in this study. Perceived maintainability is similar to life cycle management. As business grows and changes over time, it is important for maintainability to be considered in this study as it can maintain and provide up-to-date information and services to the users (Idri, Bachiri, and Fernandez-aleman 2016).

The following system quality attributes were excluded. Functional suitability refers to functional completeness, functional correctness, and functional appropriateness (Haoues et al. 2017). Functional suitability shows the extent to which a system manages to provide the correct and precise result (Rafique et al. 2012). Meanwhile, the definitions of functional completeness, functional correctness and functional appropriateness will be included. Functional completeness refers to the functions being used to help accomplish all users's specified tasks and objectives. As for functional correctness, it is where the system can provide accurate results. Also, functional appropriateness is where specified tasks and objectives can be accomplished using the functions (Moturi and Mbiwa 2015). Functional completeness and functional

appropriateness are not suitable to be the sub-characteristics of a to-be-developed or non-existence mobile application (Kopczynska, Nawrocki, and Ochodek 2018).

Reliability includes maturity, availability, fault tolerance, reliability compliance, and recoverability (Acharya and Sinha 2013). It is the capability of a system to carry out a function under a specified condition for some time. Also, it indicates how accessible a system is when it is required to be used. Not only that, it refers to whether a system can recover the data straight away even after being affected by an interruption (Moturi and Mbiwa 2015). This attribute is not adopted in this study as it is possible to conclude that when defining the requirements for mobile application, while some sub-characteristics of the quality are still under development as it carries a certain level of difficulty. In this case, maturity, which is the sub-characteristic of reliability, at the starting time to define functional and non-functional requirements or for the system quality, has no actual information to support its definition (Angelica Calazans et al. 2019).

Performance efficiency refers to the behaviour of time, utilization of resources, and the compliances of performance efficiency. It is best for the communication time between the user and the system to be the least, to reach the need of time behaviour (Acharya, and Sinha 2013). It also refers to the extent to which the mobile application provides appropriate performance, relative to the amount of resources used under certain conditions (Miguel, Mauricio, and Rodriguez 2014). In this study, the measurement of the response and processing times and throughput rates of the transaction are not the main focus in this study.

The sub-characteristics of usability are appropriateness, user interface aesthetics, operability, user error protection, learnability, and accessibility (Haoues et al. 2017). At the same time, it also refers to the ease of use of the features of the mobile application and how well a new user manages to make full use of the mobile application (Fisher et al. 2016). It also refers to how a system can help users achieve goals effectively (Meulendijk et al. 2016). This characteristic corresponds to the ease of use variable of Technology Acceptance Model, thus has been considered in this study.

Compatibility shows the degree to which a system can exchange information while sharing a similar system environment (British Standards 2011). It refers to the co-

existence and interoperability of the mobile application. Co-existence is how well a system can perform while sharing similar resources with other systems. As for interoperability, it refers to how well the system can exchange information and use the information exchanged (Moturi and Mbiwa 2015). This also refers to a situation where the user is using other mobile applications while running this application (Acharya and Sinha 2013). In this study, interoperability is not the main focus as e-AgriFinance can be developed for various system environments. It does not need to be run on a specific system environment.

On the other hand, transferability refers to adaptability, ability to install, and portability. The aspects of transferability refer to the ease in which a system or mobile application can be transferred from one environment to another be it an extent of hardware or software environment (Miguel, Mauricio, and Rodriguez 2014). It also refers to how well a system can be efficiently and effectively used in another system for the same purpose and goal in the same environment (Moturi and Mbiwa 2015). In this study, there is no crucial need for the mobile application to be transferred from one environment to another. Table 1 shows the system quality attributes of the ISO 25010 model.

Table 1. System Quality Attributes of ISO 25010 Model

System Quality	Description
1. Functional Suitability	Functional completeness, correctness and appropriateness (Haoues et al. 2017)
2. Reliability	Maturity, availability, fault tolerance, reliability compliance and recoverability (Acharya and Sinha 2013)
3. Performance efficiency	Behaviour of time, utilization of resources and the compliances of performance efficiency (Acharya and Sinha 2013)
4. Usability	Appropriateness, user interface aesthetics, operability, user error protection and accessibility (Haoues et al. 2017)
5. Security	Confidentiality, authenticity and integrity (Adewumi, Misra, and Omoregbe 2015).
6. Compatibility	Co-existence and interoperability of the mobile application (British Standards 2011)
7. Maintainability	Analysability, changeability, testability and stability of modification (Kadi, Idri, and Ouhbi 2016).
8. Transferability	Adaptability, ability to install and portability (Acharya and Sinha 2013)

ISO 25010 System Quality model is used in different sectors to evaluate the system quality of their platform. It is used in the education field where mobile learning and e-book are widely used to facilitate the process of learning nowadays (Haslinda et al. 2015). The prime importance to maximise the benefits of mobile learning is to develop a suitable system with high quality (Acharya and Sinha 2013). There must be an investigation on the mobile learning platform to guarantee the system quality. E-book applications use ISO 25010 to investigate the quality of the application and it shows that they are reliable, usable and good in function (Haslinda et al. 2015). The e-learning platform uses the ISO 25010 model to show the quality of its system. The researchers found that the system is considered appropriate if it could meet all the needs of the

users. At the same time, this system should be able to perform at a certain level despite poor network coverage and poor interface. Also, the database contains tons of confidential information and it should not be assessed by all users.

Studies showed that even the government produces a quality platform based on the ISO 25010 model. Researchers combined and matched the definition of best practice subcategories together with the ISO 25010 product quality model. This is to identify how well they are related and connected. As a result, researchers came out with a new quality model of e-government portals. Back-end, front-end web design, front-end web content, external and service were included in the quality model (Fath-Allah et al. 2018). Not only that, the agriculture sector also evaluated the quality of agricultural electronic systems and services according to the ISO 25010 model. There will be advantages for enterprises in the agriculture sector and suppliers if the platform meets the qualities, requirements and needs of the users (Ulman, Vostrovsky, and Trychtyr 2013). In the agriculture sector, the level of understanding for the use of electronic devices is supposed to be lower for suppliers and farmers compared to other sectors (Ulman, Vostrovsky, and Trychtyr 2013).

ISO 25010 quality model is one of the recent models, where it replaces the ISO 9126 quality model. It is the latest quality model that was built according to the international standardization and consensus (Izzatillah 2019; Hall et al. 2018). Also, it is comprehensive and viewed as a complete model. It covers important and crucial characteristics of quality, which includes structure according to tiers, wide-ranging of expressions, relationship between the tiers, simple and precise definitions and a set of criteria for evaluation (Haslinda et al. 2015; Behkamal, Kahani, and Akbari 2009). Moreover, ISO 25010 is one of the cores and most commonly used model in system product quality (Haboush et al. 2014). Among all the existing models discussed above, ISO 25010 is the most suitable model. Therefore, ISO 25010 system quality model will be adopted as the conceptual framework.

2.3.6 Comparison of System Quality Models

After the evaluation of different system quality models, different quality attributes were found in each model. There are a total of 29 system quality attributes. It is found that reliability, efficiency, maintainability, portability, functionality and usability are present more in recent models. Therefore, they can be considered in this study. Table 2 presents the system quality attributes in the different models, namely McCall, Boehm, FURPS, Dromy and ISO 25010 model.

Table 2. Comparison of System Quality Model

No	Quality Attributes	McCall (1977)	Boehm (1978)	FURPS (1992)	Dromey (1995)	ISO 25010 (2010)
1	Accuracy	-	-	-	-	√
2	Adaptability	-	-	-	-	√
3	Analysability	-	-	-	-	√
4	Attractiveness	-	-	-	-	√
5	Changeability	-	-	-	-	√
6	Correctness	-	-	-	√	√
7	Efficiency	√	√	-	√	√
8	Flexibility	√	-	-	-	-
9	Functionality	-	-	√	√	√
10	Human Engineering	-	√	-	-	-
11	Installability	-	-	-	-	√
12	Integrity	√	-	-	-	√
13	Interoperability	√	-	-	-	√
14	Maintainability	√	√	-	√	√
15	Maturity	-	-	-	-	√
16	Modifiability	√	√	-	-	√

17	Operability	-	-	-	-	√
18	Performance	-	-	√	-	√
19	Portability	√	√	-	√	√
20	Reliability	√	√	√	√	√
21	Resource Utilization	-	-	-	-	√
22	Reusability	√	-	-	√	√
23	Stability	-	-	-	-	√
24	Suitability	-	-	-	-	√
25	Supportability	-	-	√	-	√
26	Testability	√	√	-	-	√
27	Transferability	-	-	-	-	√
28	Understandability	-	√	-	-	√
29	Usability	√	-	√	-	√

2.3.7 Technology Acceptance Model (TAM)

Technology acceptance model (TAM) was developed in 1989 by Fred Davis. It is a theoretical model and it is commonly used to analyse technology acceptance (Schierz, Schilke, and Wirtz 2010). Also, TAM consists of variables that explain users' motivation and outcome variables directly and indirectly. User motivation variables consist of perceived ease of use, perceived usefulness, and attitudes towards technology. On the other hand, outcome variables consist of behavioural intentions and technology use (Scherer, Siddiq, and Tondeur 2019). Technology acceptance shows whether an individual has the intention to use the platform (Robinson 2019). This is also determined by two important factors, which are the perceived usefulness and perceived ease of use of the system (Arndt 2018).

Perceived usefulness is the degree to which the user believes that using a particular system would enhance their performance (Davis et al. 1989). User's acceptance and intention to use mobile application will most likely increase when they perceive the mobile application as useful (Phua, Wong, and Abu 2011). Perceived usefulness is one

of the independent variables in this study and it is vital as it brings strong influence on the intention to use the platform (Adnan et al. 2019). It shows the user's perception on new technology which use can improve his/her work performance (Faham and Asghari 2019). According to this proposed research, it will be the degree where the user believes that using this e-Agrifinance mobile application would improve the daily agriculture activities.

On the other hand, perceived ease of use refers to the degree where the user believes that using a particular system would only require little effort (Davis et al. 1989). Users will assume the mobile application is simple and they will be satisfied with the mobile application if the perceived ease of use is high (Phua, Wong, and Abu 2011). Perceived ease of use is also one of the independent variables in this study as it is important for users to have easy, clear, and understandable interaction with the platform. Also, there should not be a lot of mental and physical effort required to use the platform (Tolentino and Hernandez 2019).

TAM provides various factors that may affect the intention to use new technology (Harb and Alhayajneh 2019). They are perceived usefulness and perceived ease of use. TAM is commonly and widely used in sectors that involve e-service technology. This is because the users' intention to use affects the successful implementation of the platform. Therefore, it is important to measure the intention to use of users (Taherdoost 2018). Taherdoost (2018) articulated that the quality of the platform influences the intention to use of users.

More recent theories such as TAM2, which is the extension of the TAM has been proposed. TAM2 is an example of how the finalized TAM can be conceptually contextualized and employed to understand the peculiarities of user interactions with technology (Weng 2018). However, the added external variables in TAM2 are not of interest in this research project as the e-AgriFinance mobile application is not available for use.

TAM has constructs that have been justified and validated, which is one of the advantages of TAM. It is also found to be highly reliable (Legris, Ingham, and Collerette 2003). At the same time, TAM is specific, and it explores and predicts user's intention to use information system (Phua, Wong, and Abu 2011). Moreover, this model explains the willingness of the end-user to use new technologies. Besides, TAM

is regarded as the most influential, highly predictive and widely used model for the adoption of technologies (Robinson 2019; Asiimwe and Gronlund 2015). It can help to evaluate the reaction and response of users towards the platform before it is developed (Taherdoost 2018).

However, TAM has a number of criticisms. One of the criticisms is TAM's supposed triviality such as the putative predictors of user behaviour and uncritically accepted assumption of user intention-behaviour linkage. Furthermore, the limited explanatory and predictive power is also one of the criticisms where self-regulatory and social aspects of user behaviour is neglected. Despite the criticisms, perceived usefulness and perceived ease of use of TAM should still be considered as the fundamental tenets, which will continue to be relevant for understanding the user acceptance with technology (Weng 2018).

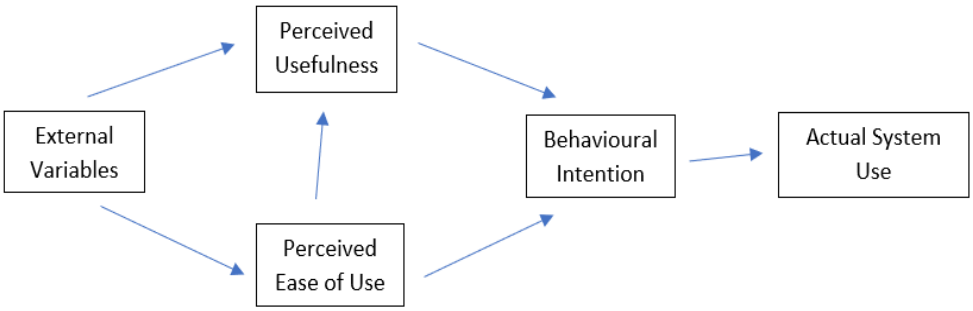

Figure 1. Technology Acceptance Model (TAM)

2.4 Intention to Use Mobile Application

Intention to use shows whether an individual will adopt a particular mobile application (Liu et al. 2010). The intention to use of the platform is affected by the adequate system quality attributes (Franca and Soares 2015). Before a mobile application is being implemented, it is good to identify the system quality attributes of mobile application that would affect the intention to use a mobile application. The understanding and knowledge of these attributes could help application builders to focus on the important attributes (Noei et al. 2017, 3089). Through the study, we can understand the determinants on the intention to use mobile application in the agriculture sector of

Sarawak. The system quality attributes of mobile application will be further discussed in the following section.

2.5 System Quality Attributes of Mobile Application

System quality attributes refer to how well a system meets specified requirements (Grover, Aggarwal, and Ahuja 2019). The number of mobile devices and mobile applications has increased significantly in recent years (Noei et al. 2017, 3089). Thus, the use of mobile applications in our daily lives has grown dramatically and it has become a basic and indispensable part of our daily lives (Elgebeily 2013). Mobile applications are normally developed under stringent and strict conditions of both time and cost. At the same time, it has to satisfy the users' requirements. Also, it must satisfy functional and non-functional attributes. In order to fulfill the users' needs and achieve good results, it must be done through ensuring good system quality attributes (Sowunmi et al. 2016).

2.5.1 Importance of System Quality Attributes

A good system is important for users to work efficiently and effectively. Also, it helps to ensure the quality of the software while making sure that it is fully functional. Developing a mobile application with good system quality attributes helps making the mobile application reliable. With good software quality standards, bugs and flaws can be identified and removed. This helps to prevent flaws before the implementation of the mobile application (Sowunmi et al. 2016).

Users are naturally careful and concerned about the general system quality of a mobile application. This is because the dependency on technology nowadays is high, which includes mobile application (Witt et al. 2017). With good system quality attributes, conformance to requirements can be assured, risk can be reduced, while internal controls can be assessed and quality can be improved to the budget constraints and given schedule (Sowunmi et al. 2016). Also, the trustworthiness of a system or mobile application serves as an important success factor to determine the intention to use of users (Mohammadi et al. 2013). Having said that, it is important for a mobile application to meet the overall quality aspect.

2.6 Conceptual Framework

To date, there is no model and framework that covers the system quality attributes of the e-AgriFinance platform that is going to be developed and the suppliers' intention to use mobile application in the agriculture sector of Sarawak. The system quality shows how important it is for e-AgriFinance mobile application to have these attributes so that the implementation of this platform can be more effective and efficient to the suppliers. This platform is significant to bring advantages and impacts to the agriculture sector in Sarawak as their goal is to be the net exporter in the coming years. Also, this can help the agricultural value chain actors such as suppliers to transform from a traditional operation to modern operation where technology is highly involved. This refers to the Industrial Revolution 4.0, where technologies are connected. There will be less involvement of humans as technologies communicate with one another to make decisions (Marr 2018). Furthermore, the success of this platform can also be used in other sectors. Thus, this proposed work can bring changes in the agriculture sector and provide necessary help and guidance to researchers in the future.

The models that are being adopted are ISO 25010 System Quality Model and Technology Acceptance Model (TAM), which shows the relationships between variables proposed. The proposed model is used to provide understanding and explanation to the factors and variables that motivate users to accept the new technologies. Perceived usefulness, perceived ease of use and intention to use e-AgriFinance mobile application are variables adopted from the Technology Acceptance Model. On the other hand, perceived security and perceived maintainability are adopted from the ISO 25010 model. The proposed framework shown in Figure 2 consists of the proposed relationship between perceived usefulness, perceived ease of use, perceived security, and perceived maintainability with the intention to use e-AgriFinance mobile application. Also, ICT readiness acts as the moderator that moderates all four relationships between the independent and dependent variables. The motivation to include ICT readiness as the moderator in this study is driven by the fact the population in Sarawak is widely spread out and ICT is viewed as a catalyst in shaping the development of the people of rural areas. It is found that 54% of the population lives in urban areas and 46% lives in rural areas. People living in rural areas have historically been facing digital exclusion, due to the lack of ICT readiness in their areas ("Digital Inclusion in Remote Sarawak" 2018). Thus, it

might bring a moderating effect on the relationship between system quality attributes and the intention to use mobile application.

TAM is a theoretical model that is commonly used to analyse technology acceptance of an individual. TAM provides various factors that may affect the intention to use technology when there is a new technology (Harb and Alhayajneh 2019). More recent theories such as extended TAM have been proposed. However, the added external variables are not of interest in this research project. TAM is not sufficient for this study as it may not fully explain suppliers' intention to use mobile application as this application involves finance. It is also equally important to investigate what system quality attributes motivate a user to adopt a technology (Kabbiri et al. 2018) Thus, relevant system quality attributes have been adopted from ISO 25010. ISO 25010 model is chosen as it is an international standard that defines the quality of a system (Haslinda et al. 2015). All ISO 25010 system quality attributes were discussed in Section 2.3.5. Therefore, in this study, ISO 25010 system quality model and TAM are adopted.

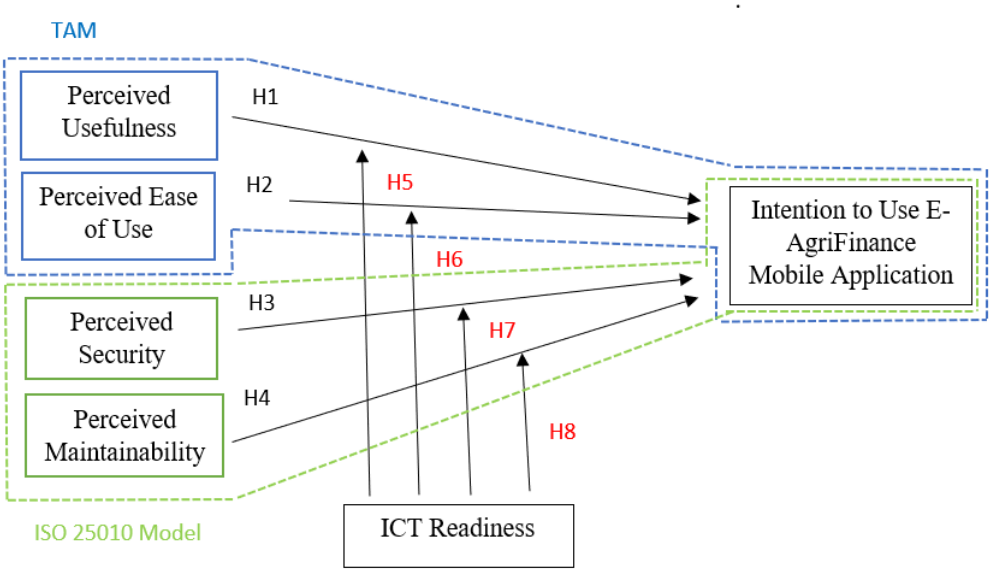

Figure 2. Conceptual Framework

2.7 Hypotheses Development

2.7.1 Perceived Usefulness

Previous studies have explored the relationship between perceived usefulness and intention to use mobile application (Kumar, Lall, and Mane 2017; Nabhani et al. 2016). Perceived usefulness shows how users believe that their work performance will become better if they adopt the information technology (Kabbiri et al. 2018). It has a direct effect on the intention to use (Kingery 2009). It refers to what extent can the needs of users be satisfied. This is important to ensure the system product carries out the suitable and appropriate functions (Rodriguez, Oviedo, and Piattini 2016). The mobile application must function correctly and delivers the right information and instruction to the users (Saha, Nath, and Sangari 2012). In this study, suppliers would perceive the e-AgriFinance mobile application as useful where the suppliers can access to information from various stakeholders such as farmers, financial institutions, and the government. Therefore, it is argued that perceived usefulness will affect the intention of use of e-AgriFinance mobile application by suppliers in the agriculture sector. The first hypothesis that will be tested is:

H1: Perceived usefulness positively affects the intention to use e-AgriFinance mobile application by suppliers in the agriculture sector.

2.7.2 Perceived ease of use

Prior literature provides evidence on the effect of perceived ease of use on the intention to use mobile application, whether directly or indirectly (Lin, Chang, and Kuo 2018; Singh and Srivastava 2018; Mcgovern, Lambert, and Verrecchia 2019). Perceived ease of use shows how easy it is for a user to use the technology (Kingery 2009). It also refers to how less effort is required from a user to use the technology (Saxena 2017). The agriculture mobile application should be a platform that allows users especially suppliers to access, use and understand the features and functions easily (Fisher et al. 2016). Even if suppliers have low or even no knowledge on how a mobile application functions, suppliers can still attain their needs effectively and efficiently (Fath-Allah et al. 2018). Also, user interface aesthetics, which is one of the sub-characteristics of perceived ease of use is important to be evaluated from the product's perspective

(Abbasi et al. 2012). Thus, it is argued that the perceived ease of use will affect the intention of use of e-AgriFinance mobile application by suppliers in the agriculture sector. The second hypothesis that will be tested is:

H2: Perceived ease of use positively affects the intention to use e-AgriFinance mobile application by suppliers in the agriculture sector.

2.7.3 Perceived Security

Several studies have analysed the effect of perceived security on the intention to use mobile application (Acharya and Sinha 2013; Moturi and Mbiwa 2015; Echalar and Subion 2018). Perceived security is one of the system qualities for agriculture mobile application because safety is assured for users to carry out mobile activities especially in financial transactions. It also reflects the extent to which a mobile application protects created and stored information from unauthorized usage (Orehovachi and Babic 2018). Security is a factor, which also acts as a barrier for users to use mobile application (Bhattacharya, Gulla, and Gupta 2012). Users' data is being protected from any disclosure and leakage, as well as to be assured of protected storage of data for privacy (Montgomery 2001; Fath-Allah et al. 2018). It protects users from any of the financial risks when a transaction is carried out. This includes hacking, non-payment, overcharging and misuse of credit cards. These security aspects contribute to creating trust among the users and act as the authenticity of mobile application (Shareef et al. 2011). Users will not want to provide their information if the mobile application has no ability to keep their personal information safely (Taherdoost 2018). Hence, it is expected that the intention of use of e-AgriFinance mobile application by suppliers in the agriculture sector is dependent on the system quality of security. The third hypothesis that will be tested is:

H3: Perceived security positively affects the intention to use e-AgriFinance mobile application by suppliers in the agriculture sector.

2.7.4 Perceived Maintainability

Prior literatures have explored the relationship between perceived maintainability and intention to use mobile application (Dewi, Ngaliah, and Rochimah 2020; Idri, Bachiri, and Fernandez-Aleman 2016). System maintainability is one of the key factors in system quality. It shows how effective and efficient the developers revise and update the system product, which in this case the e-AgriFinance mobile application (Haboush et al. 2014). Also, it reflects the degree to which a system can efficiently and effectively assess the impact of an intended change, or to diagnose system deficiencies or causes of failure (Moturi and Mbiwa 2015). Nanthaamornphong and Wetprasit (2018) stated developers and software engineers should prioritize system maintainability during the development of the mobile application. Therefore, it is argued that the intention of use of e-AgriFinance mobile application by suppliers in the agriculture sector is depending on the system quality of maintainability. The fourth hypothesis that will be tested is:

H4: Perceived maintainability positively affects the intention to use e-AgriFinance mobile application by suppliers in the agriculture sector.

2.7.5 ICT Readiness

No prior studies have investigated the proposed moderating effect of ICT readiness on the relationship between the variables. This research argues the effect of perceived usefulness, perceived ease of use, perceived security and perceived maintainability on the intention of use e-Agrifinance mobile application may be different depending on the development of ICT readiness around Sarawak.

Development of ICT requires investment in network infrastructure, skills and framework of regulation. There is a huge digital gap between developed and developing states and countries (Hamidi et al. 2011). In an information society, the physical infrastructure of information systems is a relatively important component (Kordha and Ahmetaj 2011). New and updated developments of ICT readiness are needed for the e-AgriFinance mobile application to work effectively, this includes data and digitalization, and the increased role of wireless and Internet. Telecommunication infrastructures is one of the factors that affects the usage of mobile application (Asogwa, Ugwu, and Ugwuanyi 2014). Also, network speed, quality of network access

and connectivity are important factors to maximise the benefit of mobile application (Mabe and Oladele 2015). Inconsistent level of ICT readiness has posed serious challenges to the intention to use information system (Moturi and Mbiwa 2015). Furthermore, the poor ICT infrastructure and ICT readiness stand as significant barriers for users to adopt information system (Aldheleai et al. 2019).

As many as 133 million people in India are Facebook users. However, a major proportion of this number comes from urban areas. This is because the connectivity is not as uniformed across the country as urban areas have smoother network connectivity (Sharma 2017). Telecommunication infrastructure readiness is one of the factors that affect the relationship between perceived usefulness and the intention to use mobile application (Asogwa, Ugwu, and Ugwuanyi 2014). When the network speed, quality of network access, and connectivity are good, it forms a positive relationship towards the intention to use mobile application regardless of the perceived usefulness of mobile application (Mabe and Oladele 2015). In this study, when suppliers have the intention to use the mobile application, the ICT readiness has the potential to influence the relationship between perceived usefulness and intention to use e-Agrifinance mobile application. Thus, ICT readiness changes the relationship between perceived usefulness and intention to use mobile application. Therefore, the fifth proposed hypothesis is:

H5: ICT readiness positively moderates the relationship between perceived usefulness and the intention to use e-AgriFinance mobile application by suppliers in agriculture sector.

For proper implementation of mobile application, the readiness of ICT infrastructure must be high (Stuti 2017). High ICT readiness provides ways to obtain information easily and manage the flow process well. As a result, it creates a positive relationship towards the intention to use mobile application despite the perceived ease of use of the mobile application (Rahman, Islam, and Dayani 2017). When high speed internet connectivity is available, technology such as smartphone mobile application can be used easily in the agriculture sector, and to manage crop and production through innovative techniques (Salam and Shah 2019). However, when the ICT readiness is low, it results in the users' lack of skills towards the use of information system. Thus,

it forms a negative effect on the intention to use mobile application regardless of the perceived ease of use of the mobile application (Aldheleai et al. 2019). In this study, when suppliers have the intention to use the mobile application, the ICT readiness has the potential to influence the relationship between perceived ease of use and intention to use e-Agrifinance mobile application, despite the perceived ease of use of mobile application. Thus, ICT readiness changes the relationship between perceived ease of use and intention to use mobile application. Therefore, the sixth proposed hypothesis is:

H6: ICT readiness positively moderates the relationship between perceived ease of use and the intention to use e-AgriFinance mobile application by suppliers in agriculture sector.

Breaches of security for transmission of internet and databases enable the unauthorized access of users' confidential information and often cause identity theft (Featherman, Miyazaki, and Sprott 2010). It is alarming as a team of cybersecurity researchers has discovered some applications that enable strangers to access private data of users through hidden hardcoded secrets (Arenschield 2020). Trust has been misplaced where private data inserted in the mobile application are not being adequately protected (*Safety, privacy, and security across the mobile ecosystem* 2017). Furthermore, the potential misuse of data causes and creates additional legal challenges for monitoring the security of the mobile application (Walter et al. 2017). In this study, when suppliers have the intention to use the mobile application, the ICT readiness has the potential to influence the relationship between perceived security and intention to use e-agrifinance mobile application, despite the perceived security of the mobile application. Thus, ICT readiness changes the relationship between perceived security and intention to use mobile application. Therefore, the seventh proposed hypothesis is:

H7: ICT readiness negatively moderates the relationship between perceived security and the intention to use e-AgriFinance mobile application by suppliers in agriculture sector.

In areas with low or even no ICT readiness, it could not help to enable effective search, access and recover information, thus creating a negative relationship towards intention to use mobile application, despite the perceived maintainability of mobile application (Rahman, Islam, and Dayani 2017). With technology exclusioin in some areas especially the rural areas, advantages of mobility and wireless technologies cannot be utilized. New activities using mobile application cannot be carried out and the mobile application cannot be constantly maintained (Sarrab, Elbasir and Alnaeli 2016). Moturi and Mbiwa (2015) observed that ICT readiness affects the relationship between perceived maintainability and intention to use mobile application. In this study, when suppliers have the intention to use the mobile application, the readiness of ICT has the potential to influence the relationship between perceived maintainability and intention to use e-Agrifinance mobile application, regardless of the perceived maintainability of the mobile application. Thus, ICT readiness changes the relationship between perceived maintainability and intention to use mobile application. Therefore, the eighth proposed hypothesis is:

H8: ICT readiness negatively moderates the relationship between perceived maintainability and the intention to use e-AgriFinance mobile application by suppliers in agriculture sector.

2.8 Summary of Chapter

As shown by the literature review in this chapter, it is seen that a lot of studies have adopted both ISO 25010 Quality Model and Technology Acceptance Model. A large number of studies have been dedicated to help policy makers, digital finance developers, and users to have better understanding of the intention to use mobile application. This chapter begun by discussing the relevant literature concerning information system, the role and importance of information system. The chapter also discussed the system quality models and the underpinning theory of the research, which are the ISO 25010 quality model and Technology Acceptance Model. The dependent variable is the intention to use e-AgriFinance mobile application, while the independent variables consist of perceived usefulness, perceived ease of use, perceived security, and perceived maintainability. Furthermore, the chapter discussed ICT readiness, which is the moderating variable. Lastly, the conceptual framework and hypotheses development of the study were discussed.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Chapter Overview

This chapter reviews the research methods used in this study. The research methods study the effect of system quality attributes on the intention to use E-AgriFinance mobile application of agricultural suppliers in Sarawak. This chapter first gives a brief overview of the available research designs. They are qualitative, quantitative and mixed-method. It is followed by the justification for the methodological approach taken in this study. Then, the sample size of this research, sampling technique, data collection methods, research instrument, and data analysis techniques which are descriptive analysis and structural equation modelling (PLS-SEM) were discussed. The last section describes the ethical considerations of the study.

3.2 Research Design

There are three different approaches to research designs. They are quantitative approach, qualitative approach and mixed methods. Every approach has its philosophy, and they are different in their ways. Quantitative approach collects data that focuses on specific and objective measurements that utilize statistical analysis to support or oppose a hypothesis (Campbell 2014). Also, a quantitative approach is recommended to describe current situations and establish the significance of the relationships between variables (Babbie 2016). Besides, the quantitative approach involves a large sample size (Saunders, Lewis, and Thornhill 2016). Furthermore, the quantitative approach uses questionnaires, surveys and systematic measurements as data collection techniques, and graphs or statistics as data analysis procedure that generates numerical data for the analysation of results (Yilmaz 2013; Saunders, Lewis, and Thornhill 2016). One of the advantages of using a quantitative approach is generalizable results can be yielded (Zhang and Watanabe-galloway 2014).

Qualitative approach refers to broadly stated questions related to human experiences, perceptions and realities studied through analysis of document, observation, or interview (Lovell 2012). Thus, the qualitative approach is referring to verbal data (Kilicoglu 2018; Aspers and Corte 2019). This approach includes research designs, data collection, data recording, data analysis, as well as data interpretation (Chin-Pei and Yan-Yi 2017). Qualitative research design emphasizes discovery instead of

confirmation, and process instead of outcomes (Anuar 2013). Also, the qualitative approach involves only small samples of data but an in-depth investigation. Data classification is the data analysis procedure for the qualitative method which results in non-numerical data (Saunders, Lewis, and Thornhill 2016). One of the advantages of the qualitative approach is the collection of richer and more descriptive data which help research to understand and explain the participants' experiences. However, Rahman (2017) argued that qualitative methods might omit and overlook contextual sensitivities and imperative issues in the context. The mixed-method is when both the quantitative and qualitative approaches are mixed and combined (Chin-Pei and Yan-Yi 2017). It involves data collection, data analysis and the integration of both qualitative and quantitative in a single research process (Sadan 2014).

Research designs which include quantitative, qualitative, and mixed methods attempt to provide respective advantages for a research study. The research design that is properly selected is crucial for the overall success of the research (Southern 2016). Therefore, this study adopts a quantitative approach because this study is descriptive in nature and the relationships between variables are to be explained (Saunders, Lewis, and Thornhill 2016). Besides, this study analyzes the significant relationship between dependent and independent variables. Factual and demographic, attitudes and opinions, behaviours and events are the types of data variables that the questionnaires in this study can collect (Dillman, Smyth, and Christian 2014). Hence, this study is suitable to adopt questionnaires to collect data since it aligns with the data variables mentioned. The relationships between variables of this study were obtained through the data collected. Furthermore, the data collected from the questionnaires in this study can be easily measured as it is in numerical form. Thus, these explain the research design of this study.

3.3 Sample Size

Most of the prior studies focused on the agriculture farmers, while not many research have been done on the agricultural suppliers. According to Senyolo, Wale, and Ortmann (2018), an agriculture value chain is made up of several actors from suppliers, farmers, to exporters and consumers. Suppliers in the agriculture sector are equally

important. Therefore, the suppliers in the agriculture sector of Sarawak are the focus of this study.

Some of the suppliers in Sarawak who are registered under the Malaysian Pepper Board (MPB), Malaysian Palm Oil Board (MPOB) and Malaysian Cocoa Board (MCB) are accessible. A list of suppliers from these respective boards in Sarawak was obtained, and the overlapped data was omitted. There is a total of 750 suppliers from the list obtained- 292 from the Malaysian Pepper Board, 267 from the Malaysian Palm Oil Board, and 191 from the Malaysian Cocoa Board. G*Power analysis program is used, with four predictors in this study which are perceived usefulness, perceived ease of use, perceived security, and perceived maintainability, detecting the value of at least 0.15% and 5% probability of error, with 80% statistical power. It was found that the minimum sample size needed for this study is 85 to run PLS. On the other hand, according to Krejcie and Morgan (1970), the recommended sample size is 254 for a population of 750. Thus, this research intended to collect 254 or more questionnaires.

3.4 Sampling Technique

There are different types of sampling techniques in research. They are probability sampling and non-probability sampling. Probability sampling is usually associated with strategies of survey where there is a need to make inferences from a sample about a population. This is with the goal of answering the research questions and meeting the research objectives (Saunders, Lewis, and Thornhill 2016). There are five basic probability sampling techniques, namely simple random sampling, systematic random sampling, stratified sampling, cluster sampling and multistage random sampling (Yang and Banamah 2014).

On the other hand, non-sampling technique refers to an alternative technique to select non-random samples. A non-probability sampling includes convenience sampling, quota sampling, purposive sampling, and snowball sampling (Tansey 2007). This study adopts the non-probability method because the population of suppliers in the agriculture sector of Sarawak is not accessible. Kumar (2011) claimed that in the event where there is no sampling frame, non-probability sampling design must be utilized. The list of suppliers can only be obtained from the Malaysian Pepper Board (MPB),

Malaysia Palm Oil Board (MPOB) and Malaysian Cocoa Board (MCB) but not the rest of the boards. Therefore, this study adopted the quota sampling approach.

Quota sampling is non-probability sampling. It is equivalent to a stratified random sampling where a sample is divided into sub-groups according to their common characteristics. Through this, an adequate representation of all important sub-groups in the sample can be obtained (Gorny and Napierala 2016). Also, it gives a reasonable estimation, and is inexpensive to conduct (Brick 2011). In this study, quota sampling was done based on the proportion of urban and rural population in Sarawak. The population in Sarawak is widely spread out where 54% of the population lives in urban areas while 46% lives in rural areas (Malaysian Aviation Commission 2020). This shows that the population of both urban and rural areas is almost proportionate. To represent the major characteristics of the population, this study will go according to the proportion of the urban and rural population, where 40% of agriculture suppliers are in the rural areas and 60% in the urban areas. As mentioned earlier, the population obtained for this study is 750 agricultural suppliers in Sarawak, and the sample required is 254. Thus, the minimum requirement for both rural and urban areas are 102 questionnaires and 152 questionnaires, respectively.

3.5 Data Collection Method

Sarawak is divided into a total of 12 divisions. In this study, the questionnaire was collected from 9 divisions of Sarawak, according to the list obtained from the Malaysian Pepper Board (MPB), Malaysia Palm Oil Board (MPOB), and Malaysian Cocoa Board (MCB). As this study adopted a quota sampling method, a sampling frame was not required. Therefore, data collection was done at these divisions, namely Kuching, Samarahan, Sri Aman, Betong, Sarikei, Bintulu, Sibu, Kapit, and Mukah, as shown in Table 3. As the sampling technique used in this study was quota sampling based on the proportion of urban and rural, the participants were first asked:

1) Whether there is an internet connection at their workplace

2) What types of mobile network technology are they using, whether 3G, 4G, or no connection.

3) What type of community is their workplace, whether it is a rural or urban area.

Table 3. Data Collection Sites

City/Town	Complete Responses
Kuching	41
Sibu	40
Bintulu	35
Samarahan	35
Sri Aman	25
Betong	25
Sarikei	25
Kapit	25
Mukah	25

Ethical clearance was obtained before the commencement of the data collection of this study. Prior to the participation of each participant, they were clearly notified regarding the information of this research through the participant information sheet and the recruitment verbal script that were approved by the Curtin University Human Research Ethics Committee (HREC). The information includes (1) what is the project about, (2) who is doing the research, (3) why are they being asked to take part and what will they have to do, (4) are there any benefits of being in the research project, (5) are there any risks, side-effects, discomforts or inconveniences from being in the research project, (6) who will have access to the participants' information, (7) will the results of the research be notified, (8) do they have to take part in the research project, (9) what happens next and who can they contact about the research, and (10) what is e-AgriFinance.

3.6 Questionnaire Design

The questionnaire used for this study is divided into three sections: the participant information sheet, 30 questions regarding the internet connection, mobile network technology and the type of community, and lastly, the demographic profile. There are 37 questions in total for this questionnaire. The details on the participant information sheet were made known to the respondents before they agree to participate in the survey.

It is important to ensure that the participants understand the questions so as to avoid them feeling challenged by the questions (Brace 2013). Therefore, questionnaires with different languages were created for the benefits of the participants. The questionnaires are available in three languages: English, Chinese and Bahasa Malaysia. Firstly, preparation for the questionnaire was done to lessen the risk of misinterpretation in the later stages of the translation which is followed by the translation of the questionnaire (Hall et al. 2018). Questionnaire in English was being produced, and then translated it to Bahasa Malaysia and Chinese. Questionnaires with different languages were needed because Malaysia is known for being a multilingual country. Thus, the questionnaires provided a clear understanding for the respondents according to their preferred language.

The first section involved questions regarding the respondents' internet connection at their workplace, mobile network technology and the type of community of their workplace. The second section was to measure the suppliers' intention to use E-AgriFinance mobile application that encompasses the four variables, namely the perceived usefulness, perceived ease of use, perceived security, perceived maintainability as well as the moderating variable ICT readiness. The last section was the demographic profile of the suppliers which included their gender, age, prior experience in using mobile application in general (months) and education level.

3.7 Variables and Measurements

3.7.1 Exogenous Variables

There are four exogenous variables in this research. They are perceived usefulness, perceived ease of use, perceived security and perceived maintainability. All the items for exogenous variables are shown in Table 4 below.

3.7.1.1 Perceived Usefulness

Perceived usefulness is referring to when the user uses the specific application, their productivity and the level of job performance will increase (Askool et al. 2019). There are five items under perceived usefulness, which are (i) I would find E-AgriFinance application useful in my business activities, (ii) using E-AgriFinance mobile

application would help in achieving tasks that are important to me, (iii) using E-AgriFinance mobile application would enable me to accomplish tasks more quickly, (iv) using E-AgriFinance mobile application would increase my productivity and (v) using E-AgriFinance mobile application would enhance my effectiveness in my business activities. These questions represent that the intention to use e-Agrifinance mobile application for suppliers in the agriculture sector of Sarawak will increase if the mobile application is useful. Thus, this study will examine the perceived usefulness by which the e-AgriFinance mobile application benefits the suppliers of the agriculture sector of Sarawak. Prior studies have already tested the variable of perceived usefulness (Kamble, Gunasekaran, and Arha 2019; Xie et al. 2017; Ali et al. 2016), therefore rendering it as suitable to be used in this research.

3.7.1.2 Perceived Ease of Use

Perceived ease of use is referring to the degree of effort a user exerts in using the new system (Askool et al. 2019). Also, it refers to the user's ease in understanding the operation of a mobile application (Seth et al. 2019). There are five items under perceived ease of use that show the level of ease in using the e-AgriFinance mobile application. They are (i) I would find E-AgriFinance mobile application easy to use, (ii) It would be easy for me to become skilful at using E-AgriFinance mobile application, (iii) My interaction with E-AgriFinance mobile application would be clear and understandable, (iv) I would find it easy to get E-AgriFinance mobile application to do what I want it to do and (v) Learning to operate E-AgriFinance mobile application would be easy for me. Prior studies included variables of perceived ease of use (Urumsah 2015; Kit Lok 2015; Rahman 2017; Shankar and Kumari 2016), and therefore, it is suitable to be used in this research.

3.7.1.3 Perceived Security

Perceived security is referring to users' reactions to both perceived and actual online security threats (Elizabeth, Peltier, and Barger 2018). The measurement items to test the variable of perceived security are (i) I would feel safe providing personal privacy information over the E-AgriFinance mobile application, (ii) I am not worried to use E-AgriFinance mobile application for financial transactions as I know it would be safe and secured, (iii) I would feel secure sending sensitive information across the E-

AgriFinance mobile application, (iv) I feel my information will not divulge to a third party and (v) I feel the E-AgriFinance mobile application is safe to use. Prior studies have included the variable of perceived security (Deb and Lomo-David 2014; Shankar and Kumari 2016; Elizabeth, Peltier and Barger 2018). Thus, it is appropriate to be used in this research.

3.7.1.4 Perceived Maintainability

Perceived maintainability is referring to how well and effective a developer can modify the system, where it includes reinstallation of changes and improvements (Nanthaamornphone and Wetprasit 2018). Prior studies measured perceived maintainability according to different categories. Maintainability will be measured according to the aspects of reusability, modularity, analysability, and testability. A total of five items are used to measure the variable of perceived maintainability. They are (i) I would use this E-AgriFinance mobile application because it has the ability to handle an error, (ii) I would use this E-AgriFinance mobile application because it has the ability to resume functioning in the event of an error, (iii) I would use this E-AgriFinance mobile app because this platform can be used efficiently after a modification, (iv) I would use this E-AgriFinance mobile application because this platform integrates easily with new systems and (v) I would use this E-AgriFinance mobile application because little effort is needed to locate causes of failure in the platform.

Table 4. Items of Exogenous Variables

Exogenous Variables	Items	Sources
Perceived Usefulness	PU1. I would find e-AgriFinance application useful in my business activities. PU2. Using e-AgriFinance mobile application would help in achieving tasks that are important to me. PU3. Using e-AgriFinance mobile application would enable me to accomplish tasks more quickly. PU4. Using e-AgriFinance mobile application would increase my productivity. PU5. Using e-AgriFinance mobile application enhances my effectiveness on my business activities.	(Deb and Lomo-David 2014; Ali et al. 2016; Xie et al. 2017)
Perceived Ease of Use	PEoU1. I would find e-AgriFinance mobile application easy to use. PEoU2. It would be easy for me to become skillful at using an e-AgriFinance mobile application. PEoU3. My interaction with e-AgriFinance mobile application would be clear and understandable. PEoU4. I would find it easy to get an e-AgriFinance mobile application to do what I want it to do. PEoU5. Learning to operate an e-AgriFinance mobile application would be easy for me.	(Engwanda 2014; Ali et al. 2016; Weng et al. 2018)

Perceived Security	PS1. I would feel safe providing personal privacy information over the e-AgriFinance mobile application. PS2. I am not worried to use e-AgriFinance mobile application for financial transactions as I know it would be safe and secure. PS3. I would feel secure sending sensitive information across the e-AgriFinance mobile application. PS4. I feel my information will not be divulged to a third party. PS5. I feel the e-AgriFinance mobile application is safe to use.	(Ulman, Vostrovsky, and Tyrychtr 2013)
Perceived Maintainability	PM1. I would use this e-AgriFinance mobile application because it has the ability to handle errors. PM2. I would use this e-AgriFinance mobile application because it has the ability to resume functioning in the event of an error. PM3. I would use this e-AgriFinance mobile application because this platform can be used efficiently after a modification. PM4. I would use this e-AgriFinance mobile application because this platform integrates easily with new systems. PM5. I would use this e-AgriFinance mobile application because little effort is needed to locate causes of failure in the platform.	(Haslinda et al. 2015)

3.7.2 Endogenous Variable

3.7.2.1 Intention to Use

Intention to use refers to how a user anticipates and plans to use a new mobile application (Guo 2015). Intention to use will be measured by the items of (i) I intend to use E-AgriFinance mobile application in the future, (ii) I would try to use E-AgriFinance mobile application in my workplace, (iii) I predict I would use E-AgriFinance mobile application in the days to come, (iv) I plan to use E-AgriFinance mobile application frequently and (v) I will not hesitate to try out new E-AgriFinance mobile application. This research takes intention to use as the dependent variable as the e-AgriFinance mobile application does not exist yet. Table 5 shows the items of the endogenous variable.

Table 5. Items of Endogenous Variable

Endogenous Variable	**Item**	**Source**
Intention to Use E-AgriFinance Mobile Application	IU1. I intend to use e-AgriFinance mobile application in the future. IU2. I would try to use e-AgriFinance mobile application in my workplace. IU3. I predict I would use e-AgriFinance mobile application in the days to come. IU4. I plan to use e-AgriFinance mobile application frequently. IU5. I will not hesitate to try out the new e-AgriFinance mobile application.	(Venkatesh et al. 2003; Ali et al. 2016)

3.7.3 Moderating Variable

3.7.3.1 ICT Readiness

The moderating variable of this study is ICT readiness. It refers to the degree where society is prepared and ready to participate in the Networked World and benefit from ICT facilities (Motahari-Nezhad, Shekofteh, and Kazerani 2018). The Networked Readiness Index consists of two component indexes, which are network use and enabling factors. Network use refers to the measure of ICT proliferation. It refers to the number of internet users per hundred inhabitants, the number of cellular subscribers per hundred inhabitants, the internet users per host, and the availability of public access to the Internet (Pratipatti and Gomaa 2019). Table 6 presents the items of the moderating variable.

As for enabling factors, it includes network access, network policy, networked society and networked economy. Network Access refers to the quality of network infrastructure and the availability of equipment, programs, and support services that allow ICTs to be used. As for Network Policy, it is the policy of the information and communications environment. Networked Society refers to the opportunity level for the community in the ICT industry. As for the Networked Economy, it relates to the level of participation in the Networked World. Also, the availability and quality of complementary infrastructure.

Table 6 shows the items of the moderating variable, which include (i) I can access ICT infrastructure easily. (ii) I feel comfortable in getting access to ICT infrastructure. (iii) I think the ICT infrastructure in my residing town is readily accessible, (iv) I think the internet coverage in my residing town is wide and (v) I think the availability of ICT infrastructure in my residing town is high. The multi-group analysis will be used to investigate the relationship between the variables, whether there will be differences according to the condition of the moderating variable (Her, Shin, and Pae 2019). The multi-group analysis will be carried out according to hierarchical order and approach, where the result will be compared accordingly (Floh and Treiblmaier 2006). A direct test of measurement invariance and structural invariance with different conditions will be carried out accordingly (Her, Shin, and Pae 2019).

Table 6. Items of Moderating Variable

Moderating Variable	Item	Source
ICT Readiness	ICT1. I can access ICT infrastructure easily. ICT2. I feel comfortable in getting access to ICT infrastructure. ICT3. I think the ICT infrastructure in my residing town is readily accessible. ICT4. I think the internet coverage in my residing town is wide. ICT5. I think the availability of ICT infrastructure in my residing town is high.	(Hashim 2008; Rahman 2017)

3.7.4 Control Variables

The control variable is an important tool for researchers to meet the criterion for causal inference. Also, hypothesized effects will be estimated at specific levels of the control variables (Klarmann and Feurer 2018). There are four control variables that can influence the intention to use e-AgriFinance mobile application among the suppliers of the agriculture sector in Sarawak. The control variables are age, gender, educational level, and prior experience of using information systems, which in this study, refers to mobile application.

3.7.4.1 Age

Age is one of the important demographic characteristics that influences the intention to use an e-AgriFinance mobile application (Lian and Yen 2014; Passyn, Diriker, and Settle 2011). Suppliers of different ages decide differently in terms of the intention to use information systems (Morris, Venkatesh, and Ackerman 2005). The younger group of suppliers are more exposed to technology than the older group of suppliers. Suppliers who are over 60 have lesser contact with technology (Pfeil, Arjan, and Zaphiris 2009). Therefore, age could significantly influence the suppliers' intention to use mobile application (Bae and Lee 2011).

3.7.4.2 Gender

Gender refers to a set of characteristics that differentiate males and females (Faqih and Jaradat 2015). Gender differences become more and more important in managing the development of new technology because the perception and willingness of different gender to have the intention to use the mobile application are different (Almarazroi et al. 2019). In comparing male and female, study showed that the intention to use mobile application is relatively high among men (Morris, Venkatesh, and Ackerman 2005; Lee, Lee, and Rha 2019; Hwang, Lee, and Kim 2019). As a result, the intention to use an e-AgriFinance mobile application will be different for males and females.

3.7.4.3 Education Level

Education level can be categorized into no formal education, primary education, middle school education and tertiary education (Boazar, Yazdanpanah, and Abdeshahi 2019). Farmers' and suppliers' demographic features such as education level has an impact on the intention to use e-AgriFinance mobile application. Prior study showed that farmers and suppliers with higher educational levels are more willing to adopt new technology compared to farmers and suppliers with a lower educational level (Duong, Luck, and Zander 2019). Not only that, prior study also showed that suppliers with higher education levels will be able to acquire more information about new technology. Thus, there will be higher chances for them to have a higher level of intention to use (Gao et al. 2017). Also, farmers and suppliers with secondary education or lower rely more on their traditional habits and experiences compared to new technology (Brown, Daigneault, and Dawson 2019). Thus, as prior studies suggested, different education levels will lead to a different level of intention to use.

3.7.4.4 Prior Experience

Experience refers to an individual who is being modified profoundly and is more knowledgeable in a particular area after enduring the learning process (Roth and Jornet 2014). A supplier who has experience of using mobile applications influences the intention to use e-AgriFinance mobile application. Their intention to use will vary according to their experiences on the usage of mobile application (Lien Chen at el. 2011). According to the cognitive dissonance theory, prior experience has the potential

to change comprehensions of users (Harmon-Jones and Mills 2019). As a result, suppliers' experience of using the mobile application will be controlled in this study.

3.8 Data Analysis Techniques

3.8.1 Descriptive Analysis

Descriptive statistics can show information related to any variable of interest. The researcher needs to know the measurement level that is to be used with the statistics and the information that can be provided by the statistics (McHugh 2003). In this study, descriptive statistical analysis will be used. The demographic characteristics such as gender, age, prior experience in using mobile application in general and the highest level of education of the respondents will be analyzed. Also, descriptive analysis of perceived usefulness, perceived ease of use, perceived security, perceived maintainability, intention to use and ICT readiness are carried out. This is to obtain preliminary information about the sample such as frequency, minimum value, maximum value, mean and standard deviation (Hair et al. 2010).

3.8.2 Structural Equation Modeling (SEM)

Structural Equation Modeling (SEM) is the second-generation multivariate data analysis method. It can test theoretically supported and additive causal models. Thus, it gained popularity amongst social scientists (Haenlein and Kaplan 2004). Also, structural equation modeling is a combination of path modelling, multiple regression and factor analysis (Ramayah et al. 2018). Researchers should use PLS-SEM when the analysis is concerned with the testing of the theoretical framework from a perspective of prediction. Besides, it is advisable to use PLS-SEM when there are concerns regarding the issues of distribution, such as lack of normality (Hair et al. 2019).

The partial least squares structural equation modeling (PLS-SEM) will be used in this study. This is for the hypotheses to be tested through SmartPLS 3.0 software. PLS-SEM is a modeling approach designed to maximize the explained variance of the dependent latent constructs (Hair, Ringle, and Sarstedt 2011). PLS-SEM will be used because it provides stronger estimations of the structural model. At the same time, a single determinant score can be obtained for each SEM composite observation.

Furthermore, the reasons regarding prediction and non-normal data in this study show that lack of normality further supports the use of PLS-SEM. Thus, this study uses a PLS-SEM data analysis approach.

3.9 Ethical Considerations

The researcher was allowed to carry on with the data collection to recruit participants after the ethics approval. Curtin University Human Research Ethics Committee has approved this research with the approval number of HRE2020-0119. This research complies to the standard conditions stated in the ethics approval. The participant has a choice whether to take part or not as the participation in the questionnaire is voluntary. The purpose, extent and possible risks of the involvement in this project were well-explained to the participants. Also, the information collected in this research is non-identifiable, and all responses remain private and confidential. At the same time, the research data will be stored securely and safely at Curtin University. It will be retained for seven years after the research is published. Only the research team has access to the information collected in this study.

3.10 Summary of Chapter

This chapter discussed various research methodologies in this study. Different types of research designs were discussed briefly, which includes quantitative, qualitative and mixed methods. After that, the chosen method, which is the quantitative approach and the justifications of why it was selected in this study, were mentioned. The questionnaire was the main method for data collection to gather all relevant and necessary data. The quota sampling approach was adopted, and this study was based on the proportion of the urban and rural population, where 40% of agriculture suppliers were from the rural areas and 60% from the urban areas. The study sites of the research were around Sarawak, where there was no specific location. A total of 276 questionnaires were collected for this study, and it satisfied the number of questionnaires required. Then, the design of the questionnaire and instruments were thoroughly discussed. Descriptive analysis and PLS-SEM, which are the data analysis method of this study, were discussed and explained. Lastly, the ethical considerations of the data collection methods were described.

CHAPTER FOUR: DATA ANALYSIS AND RESULTS

4.1 Chapter Overview

This chapter shows the empirical findings of the study. SPSS V25 was used to carry out the descriptive analysis, then the assessments on the measurement model and structural model were carried out using SmartPLS 3.0. Every test conducted was then being analyzed with concise interpretation. All the tests carried out have specific criteria and threshold values. Next, the results and the discussions of the tests are discussed below. Finally, the implications of the study are presented, including both the theoretical and managerial implications.

4.2 Data Preparation

Both data entry and coding were involved in the process of data preparation. There were total of a 276 responses recorded manually by the researcher in Microsoft Excel. The researcher made great efforts in checking for incomplete and invalid data during the coding process. It was found that there were no incomplete and invalid data found. Not only that, the researcher was observant when the respondents were completing the questionnaires.

After preliminary analysis, a total of 276 usable questionnaires were loaded into SPSS V25 for analysis purposes. Descriptive statistical reports were generated from the database SPSS statistics. Also, checking of incomplete and invalid data was carried out thoroughly. Normality test, common method bias, and collinearity test were conducted.

The measurement model assessment and structural model assessment were conducted using SmartPLS 3.0. The data available in SPSS was then exported back to the MS Excel CVS file to generate raw data for SmartPLS 3.0 data analysis software.

4.3 Respondents' Profile

Descriptive statistics show the demographic profile and information of the respondents. The mean, standard deviation, range of scores, skewness, and kurtosis were included in the descriptive statistics.

All 276 questionnaires were returned and completed. Based on the analysis run using SPSS, a majority, with 75.4% of the suppliers involved, were males respondents and a minority of 24.6% were female respondents. Of 276 respondents who completed the questionnaires, the highest percentage age group of the respondents were aged between 41-50 comprising 42%, followed by age group 31-40, 26.5%, age group 51-60, 18.1%, age group 18-30, 8% and age group above 60, 5.4%. Almost two-thirds of the participants (65.6%) indicated that they have prior experience in using mobile application in general for more than 24 months, 18.1% with less than 6 months of experience, 9.1% with 12-24 months of experience, and 7.2% with 6-12 months of experience. A majority of the participants comprising of 32.2% completed high school, 29.3% achieved a bachelor's degree, 22.5% completed Diploma, 13.4% completed primary school, and 2.2% completed a master's degree. The highest level of education accomplished by one of the respondents was a Ph.D., comprising 0.4%. A majority of the participants (96.7%) indicated that they have an internet connection, and only 3.3% of the participants indicated that they do not have an internet connection. 56.9% of those interviewed indicated that they are using 4G mobile network technology, 39.8% using 3G, and 3.3% with no internet connection. Of the 276 participants who completed the questionnaire, 56.9%, of the respondents reported that their current workplace were in the urban areas while 43.1% of them were in rural areas. Table 7 shows the demographic information of the respondent involved in this study.

Table 7. Respondent Demographic Information

Demographic	Frequency (n=276)	Percentage (%)
Gender		
Male	208	75.4
Female	68	24.6
Age		
18-30	22	8.0
31-40	73	26.5
41-50	116	42.0
51-60	50	18.1
Above 60	15	5.4
Prior Experience (Months)		
<6	50	18.1
6-12	20	7.2
12-24	25	9.1
>24	181	65.6
Highest Level of Education		
Primary School	37	13.4
High School	89	32.2
Diploma	62	22.5
Bachelor's Degree	81	29.3
Master's Degree	6	2.2
PhD	1	0.4
Internet Connection		
Yes	267	96.7
No	9	3.3
Mobile Network		
3G	110	39.8
4G	157	56.9
No connection	9	3.3
Type of Community		
Rural	119	43.1
Urban	157	56.9

4.4 Descriptive Statistics

The mean and standard deviation of each indicator were studied using SPSS version 25. The results show that this study's sample size is 276, the minimum value of all indicators is 1, and the maximum value of all indicators is 5. Table 8 shows the mean and standard deviation for all the indicators. Also, Table 9 shows the correlation matrix and descriptive statistics for all constructs in this study.

Table 8. Descriptive Statistics of Instrument

Construct	Indicator	Mean	Standard Deviation
Perceived Usefulness	PU1	4.01	0.820
	PU2	3.92	0.749
	PU3	3.94	0.793
	PU4	3.99	0.816
	PU5	3.96	0.762
Perceived Ease of Use	PEoU1	3.67	1.228
	PEoU2	3.62	1.290
	PEoU3	3.54	1.245
	PEoU4	3.60	1.198
	PEoU5	3.66	1.236
Perceived Security	PS1	3.40	1.142
	PS2	3.46	1.148
	PS3	3.43	1.092
	PS4	3.39	1.082
	PS5	3.50	1.107
Perceived Maintainability	PM1	3.42	1.140
	PM2	3.39	1.091
	PM3	3.31	1.087
	PM4	3.44	1.085

	PM5	3.41	1.113
Intention to Use	IU1	3.45	1.219
	IU2	3.37	1.297
	IU3	3.32	1.202
	IU4	3.27	1.096
	IU5	4.02	1.067
ICT Readiness	ICT1	3.49	1.338
	ICT2	3.48	1.222
	ICT3	3.40	1.239
	ICT4	3.27	1.191
	ICT5	3.39	1.305

Table 9. Correlation Matrix and Descriptive Statistics for All Constructs

Construct	Mean	Standard Deviation	PU	PEoU	PS	PM	IU
Perceived Usefulness (PU)	3.96	0.79	1.000				
Perceived Ease of Use (PEoU)	3.62	1.24	0.309**	1.000			
Perceived Security (PS)	3.44	1.11	0.252**	0.251**	1.000		
Perceived Maintainability (PM)	3.40	1.10	0.130*	0.197*	0.120*	1.000	
Intention to Use (IU)	3.49	1.18	0.373**	0.680**	0.232**	0.195*	1.000

**Correlation coefficient is significant at p<.01, *Correlation coefficient is significant at p<.05

4.5 Verifying Data Characteristics

This section explains and discusses the analysis performed to validate the characteristics of the collected data. This ensures the data is usable, valid, and complete for the higher-level analysis undertaken in SmartPLS 3.0. The verification of any missing values, data normality, and potential common method bias is included in this analysis.

4.5.1 Missing Data

Missing data can reduce the power and efficiency of a study (Bell et al. 2014). Therefore, conducting the missing value analysis is a necessary step before any other analysis. The frequency analysis in SPSS was done to identify any missing values in the data set. It was found that there were no missing values in the data.

4.5.2 Outliers

The data were tested to investigate if there were any outliers after the analysis for the missing value. Outlier refers to an observation that is inconsistent with the remaining data set. If there appears to be outliers, the anomalous observations will be removed from data wherever appropriate (Hodge and Austin 2004). To identify outliers, the boxplot was used. It was found that many cases were deemed to be outliers.

Boxplots identify the lower extreme, lower quartile, median, upper quartile, and upper extreme points. The outliers refer to the points that exceeded the lower and extreme upper values of the box plot. The values of more than three interquartile ranges (IQR) from the end of the box are extreme, and they are denoted with an asterisk (*). On the other hand, values between 1.5 IQR and 3 IQR from the end of the box are the outliers, and they are denoted as (o). Hoaglin and Iglewicz (1987) claimed that 1.5 IQR and 3 IQR are not valid ways to identify outliers.

As a result, the Mahalanobis distance test was adopted to investigate the data set's outliers. A relational expression like "p_md < 0.001" results as a 1 if it is in a compute command (Tabachnick, Fidell, and Ullman 2007). In this study, it was found that there was no outlier.

4.5.3 Data Normality

The Shapiro-Wilk test and the Skewness and Kurtosis test are the two different statistical analyses used to test data normality. SPSS software can produce the result of both normality tests. To achieve normally distributed data, the threshold value for the p-value of the Shapiro-Wilk Test is 0.05 (Shapiro and Wilk 1965; Wang et al. 2013). The Skewness and Kurtosis z-value should be in the range of -1.96 and +1.96 to achieve data normality (Cramer and Howitt 2004; Doane and Seward 2011). As shown in Table 10, most of the variables' z-values have exceeded its threshold value, between -1.96 and +1.96. Also, all variables in this study have a p-value of <0.001 from the Shapiro-Wilk test. These values imply that the data is not normal and not normally distributed. Therefore, the results in Table 10 concludes and further supports the use of PLS.

Table 10. Variables' Normality Test

Variables	Items	Skewness		Kurtosis		z-value (Statistic/Standard Error)		Shapiro-Wilk Test (p-value)
		Statistic	Standard Error	Statistic	Standard Error	Skewness	Kurtosis	
Perceived Usefulness	5	-1.834	0.147	4.264	0.292	-12.476	14.603	<0.001
Perceived Ease of Use	5	-1.237	0.147	0.077	0.292	-8.415	0.264	<0.001
Perceived Security	5	-0.912	0.147	1.876	0.292	-6.204	6.425	<0.001
Perceived Maintainability	5	-0.728	0.147	1.140	0.292	-4.952	3.904	<0.001
Intention to Use	5	-0.499	0.147	-1.405	0.292	-3.395	-4.812	<0.001
ICT Readiness	5	-0.349	0.147	-1.663	0.292	-2.374	-5.695	<0.001

4.5.4 Common Method Bias

Common method bias is a phenomenon caused by the measurement method used in the structural equation modeling study. Also, it may be caused by the implicit social desirability associated with participants who complete the questionnaire in a particular way, which may cause the indicators to share a common variation (Kock 2015). Lack of consideration of common method bias in the study negatively affects the interpretation of research outcomes. This may include biased estimations of the validity and reliability, and biased estimation of the relationships between variables, which will then affect hypothesis testing (Aguirre-Urreta and Hu 2019).

Harman's Single Factor test was carried out using SPSS to examine the possibility of common method variance in this study. This test was adopted as it has been the most popular technique in the discipline (Aguirre-Urreta and Hu 2019). The percentage of variance in the extraction sums of squared loadings can only result in a maximum of 50% (Podsakoff et al. 2003). The test was carried out on all items used in this study. The percentage of variance in the extraction sums of squared loadings is 36.25%, below the recommended 50%. As a result, common method bias is not a major concern in this study.

Besides Harman's Single Factor test, the collinearity test is another statistical test to examine common method bias. Multicollinearity, also known as collinearity between variables or indicators, is an important factor in assessing formative measures due to its potential for unstable indicator weights (Hair et al. 2012). Therefore, the full collinearity test has been carried out in this study using SmartPLS 3.0. The collinearity test is a comprehensive procedure for both the vertical and lateral collinearities' simultaneous assessment (Kock and Lynn 2012).

The same measures similar to evaluating formative measurement models such as VIF values need to be applied to access collinearity. Each set of predictor constructs needs to be assessed separately for each subpart of the structural model (Cassel, Hackl, and Westlund 1999). This test's recommended value is a variance inflation factors (VIF) value of less than 3.3 (Kock 2015). VIF that is greater or equal to 3.3 shows a potential collinearity problem (Diamantopoulos and Siguaw 2006). According to Hair et al. (2012), a VIF value that is equal to or more than 5 indicates a potential collinearity problem. The VIF value that exceeds 5 or 10, shows that the associated regression coefficients are poorly estimated due to multicollinearity (Montgomery 2001).

In this study, all of the independent variables' inner VIF values are lower than 3.3. Therefore, this implies that multicollinearity issues may not bring serious threat to the data analysis of this study. Table 11 shows the collinearity test results.

Table 11. Collinearity Test Results

Constructs	Items	Outer VIF Values	Inner VIF Values
Perceived Usefulness	PU1	2.87	1.11
	PU2	1.98	
	PU3	2.55	
	PU4	2.64	
	PU5	2.29	
Perceived Ease of Use	PEoU1	3.08	1.53
	PEoU2	2.78	
	PEoU3	2.78	
	PEoU4	2.74	
	PEoU5	2.77	
Perceived Security	PS1	2.68	2.23
	PS2	2.72	
	PS3	2.32	
	PS4	2.02	
	PS5	2.27	
Perceived Maintainability	PM1	2.47	2.20
	PM2	2.33	
	PM3	2.14	
	PM4	2.36	
	PM5	2.36	
Intention to Use	IU1	3.10	NA
	IU2	3.22	
	IU3	2.83	
	IU4	2.55	
	IU5	3.51	
ICT Readiness	ICT1	3.53	3.43
	ICT2	2.48	
	ICT3	2.06	
	ICT4	2.23	
	ICT5	2.37	

4.6 Assessment of Measurement Model

The research model is evaluated using Partial Least Square Structural Modelling (PLS-SEM) in this study. SmartPLS 3.0 is used to assess both the measurement and structural model of a study (Ramayah et al. 2018). The validity and reliability of the measurement model will first be assessed using PLS. It includes indicator reliability, internal consistency reliability, convergent validity, and discriminant validity. The measurement model's analysis and findings are shown in the following subsections.

4.6.1 Indicator Reliability

Indicator reliability is also known as the size of outer loading or factor loading. Outer loadings indicate the strength of the indicators on their latent construct or variable. According to Hair et al. (2017), the recommended outer loading is greater than 0.708. On the other hand, Hulland (1999) and Byrne (2016) suggested that if other items have high scores of loadings to complement the composite reliability and average variance extracted (AVE) value, the satisfactory values for indicator reliability loadings are more than 0.7, 0.6, 0.5 or 0.4. The reliability statistics table below shows all indicators' loadings, and the loadings range from 0.80 to 0.90. Hence, all of the indicators have met the satisfactory threshold value of composite reliability. Table 12 presents the reliability statistics of this study.

4.6.2 Internal Consistency Reliability

The composite reliability of the indicators varies between 0 and 1. When the composite reliability (CR) of each construct is between 0.7 – 0.9, it meets the threshold value, and hence it is considered to have adequate consistency (Gefen, Straub, and Boudreau 2000). Value more than 0.9 are not desirable as this denotes that all the indicators are measuring the same phenomenon and therefore, not possible to be a valid measurement construct (Ramayah et al. 2018). The reliability statistics table below shows that the values of composite reliability are between 0.81, and 0.84. This met the recommended threshold values and they belong to a satisfactory level. Therefore, the results indicate that the items used to represent the constructs show satisfactory internal consistency reliability.

Table 12. Reliability Statistics

Construct	Items	Loadings	Composite Reliability (CR)	Average Variance Extracted (AVE)
Perceived Usefulness	PU1	0.89	0.81	0.68
	PU2	0.80		
	PU3	0.84		
	PU4	0.80		
	PU5	0.80		
Perceived Ease of Use	PEoU1	0.88	0.84	0.75
	PEoU2	0.87		
	PEoU3	0.87		
	PEoU4	0.86		
	PEoU5	0.86		
Perceived Security	PS1	0.86	0.83	0.72
	PS2	0.87		
	PS3	0.85		
	PS4	0.81		
	PS5	0.84		
Perceived Maintainability	PM1	0.85	0.82	0.71
	PM2	0.83		
	PM3	0.83		
	PM4	0.84		
	PM5	0.85		
Intention to Use	IU1	0.88	0.84	0.77
	IU2	0.89		
	IU3	0.87		
	IU4	0.84		
	IU5	0.90		

4.6.3 Convergent Validity

The convergent validity test is carried out as empirical evaluation of formative measurement models in PLS-SEM. Convergent validity refers to how a measure relates to other measures of the same phenomenon (Cheah et al. 2018). Convergent validity tests whether the formative measured construct is highly correlated with reflective measures of the same construct. The convergent validity of the measurement model is assessed by analyzing the average variance extracted (AVE). Convergent validity is acceptable and adequate when the constructs have an AVE value of 0.5 and above. Table 12 presents the AVE values of all the constructs in this study, where they range from 0.68 to 0.77. The constructs' average variance extracted (AVE) values suggest that the convergent validity is adequate as they exceeded 0.5.

4.6.4 Discriminant Validity

Discriminant validity refers to the extent to which a given construct's measures differ from other constructs in the same model (Hulland 1999). It is the subjective independence of every indicator on its latent variable. Three models can be used to assess the discriminant validity of the measurement model. They are the cross-loading criterion, Fornell, and Larcker Criterion and Heterotrait-Monotrait ratio of correlations (HTMT).

4.6.4.1 Cross Loading Criterion

The cross-loading criterion was the first method to assess discriminant validity. The SmartPLS 3.0 was used to generate the cross-loadings results. The rule of thumb of cross-loadings is that each indicator should load highest on the construct that is intended to be measured in the model (Hair et al. 2012). Also, the difference between the loadings across latent variables must not be less than 0.1 (Ramayah et al. 2018). As shown in Table 13, the bolded elements load the highest on the construct it intended to measure, and the difference between the loadings across latent variables are more than 0.1. Therefore, the study has met all the criteria required.

Table 13. Cross Loadings Results

Construct	PU	PEoU	PS	PM	IU
PU1	**0.89**	0.31	0.26	0.26	0.40
PU2	**0.80**	0.23	0.26	0.25	0.34
PU3	**0.84**	0.22	0.18	0.17	0.29
PU4	**0.80**	0.19	0.12	0.10	0.24
PU5	**0.80**	0.25	0.15	0.15	0.28
PEoU1	0.26	**0.88**	0.42	0.45	0.57
PEoU2	0.28	**0.87**	0.47	0.46	0.63
PEoU3	0.26	**0.87**	0.46	0.45	0.58
PEoU4	0.28	**0.86**	0.53	0.49	0.62
PEoU5	0.22	**0.86**	0.41	0.42	0.59
PS1	0.20	0.47	**0.86**	0.60	0.65
PS2	0.18	0.45	**0.87**	0.65	0.67
PS3	0.24	0.47	**0.85**	0.57	0.65
PS4	0.23	0.47	**0.81**	0.63	0.61
PS5	0.20	0.37	**0.84**	0.60	0.61
PM1	0.26	0.45	0.64	**0.85**	0.66
PM2	0.21	0.42	0.57	**0.83**	0.61
PM3	0.17	0.43	0.59	**0.83**	0.62
PM4	0.16	0.41	0.60	**0.84**	0.63
PM5	0.20	0.48	0.62	**0.85**	0.64
IU1	0.38	0.64	0.67	0.68	**0.88**
IU2	0.29	0.63	0.72	0.67	**0.89**
IU3	0.28	0.56	0.67	0.68	**0.87**
IU4	0.35	0.54	0.61	0.61	**0.84**
IU5	0.39	0.64	0.65	0.67	**0.90**

4.6.4.2 Fornell and Larcker's Criterion

Fornell and Larcker's Criterion is the second method used to assess discriminant validity. It is a method that compares the square root of AVE with the correlation of the latent construct. It is recommended that the AVE of each construct should be higher than its squared correlation with any other construct (Hair et al. 2012). It can also be assessed by looking at the square root of AVE on the diagonal as it is supposed to be higher than the correlation on the off diagonal (Ramayah et al. 2018). Table 14 below illustrates the result of Fornell and Larcker's Criterion. All of the bolded elements have a higher value than the correlation on the off diagonal. Thus, this study met the criteria required.

Table 14. Fornell and Larcker's Criterion

Construct	**IU**	**PEoU**	**PM**	**PS**	**PU**
IU	**0.88**				
PEoU	0.69	**0.87**			
PM	0.75	0.52	**0.84**		
PS	0.75	0.53	0.72	**0.85**	
PU	0.38	0.3	0.24	0.25	**0.83**

4.6.4.3 Heterotrait-Monotrait Ratio of Correlation (HTMT)

Heterotrait-Monotrait Ratio of Correlation (HTMT) is the third and most reliable method used to assess discriminant validity. HTMT was developed to address the insensitivity of the cross-loading and Fornell and Larcker criterion. This is because both of the criteria are largely unable to detect a lack of discriminant validity. The HTMT method estimates the correlation between the constructs (Henseler, Ringle, and Sarstedt 2015). The criteria recommend that the HTMT value should not exceed 0.9. Simultaneously, the confidence interval of $HTMT_{inference}$ values for the structural paths should not have a value of 1 as it indicates a lack of discriminant validity (Ramayah et al. 2018). Table 15 presents the HTMT results, and there is no value of 1, as they are ranging from 0.254 to 0.827. Thus, the discriminant validity of the study is accepted.

Overall, all the necessary reliability and validity tests on the measurement model were conducted. All tests undertaken met the recommended criteria. The tests for the measurement model level have confirmed that this study's indicators are fit and acceptable to be used in the structural model analyses. Table 15 shows the heterotrait-monotrait ratio of the correlation criterion.

Table 15. Heterotrait-Monotrait Ratio of Correlation (HTMT) Criterion

Construct	**IU**	**PEoU**	**PM**	**PS**	**PU**
IU					
PEoU	0.744 (0.674,0.807)				
PM	0.827 (0.762, 0.892)	0.576 (0.487,0.664)			
PS	0.825 (0.764,0.885)	0.581 (0.496,0.659)	0.800 (0.726,0.869)		
PU	0.413 (0.321,0.504)	0.323 (0.213,0.424)	0.254 (0.170,0.348)	0.264 (0.165,0.361)	

4.7 Assessment of the Structural Model

This section will discuss the tests undertaken to study the validity of the structural model. All the tests were carried out using SmartPLS 3.0. The lateral collinearity test, path coefficients, coefficient of determination, effect size, predictive relevance, and hypothesis testing were included.

4.7.1 Lateral Collinearity

Although the criteria of discriminant validity in the measurement model were carried out, it is still possible that the lateral collinearity issue is neglected. It is detrimental that the researcher addresses the collinearity issue upon the start of the structural model assessment. Thus, it is recommended to assess the predictor construct set separately (Ramayah et al. 2018). The criterion for the variance inflation factor (VIF) is less than 3.3 and less than 5 (Diamantopoulos and Sigaw 2006). It shows a potential collinearity problem if the VIF value is more than 3.3 and 5. Table 16 shows the lateral collinearity test results. All VIF values are less than 3.3 and 5. Therefore, it can be concluded that this collinearity issue may not cause serious threats to the data analysis of this study.

Table 16. Lateral Collinearity Test

Construct	**Intention to Use (VIF)**
Perceived Usefulness	1.14
Perceived Ease of Use	2.09
Perceived Security	2.26
Perceived Maintainability	2.28

4.7.2 Path Coefficients

Path coefficients must be investigated because they represent the hypothesized relationships that link the constructs (Ramayah et al. 2018). However, there are no assumptions made about the distribution of data by PLS. This is because it is a non-parametric analysis, where the t-value will be inflated or deflated, which may lead to a Type 1 error if the data is not normal (Ramayah et al. 2018). The PLS-SEM algorithm draws on the standardized latent variable, and it calculates the standard coefficient range between negative 1 to positive 1 for every relationship in the model.

The rule of thumb is that the path coefficient's value should be close to positive 1 and negative 1. The value of the path coefficient that is positive 1 indicates a strong positive relationship while the value of the path coefficient that is negative 1 indicates a strong negative relationship. The bootstrapping procedure is necessary to obtain the value of the path coefficient. This research's bootstrapping procedure includes 500 subsamples, a one-tailed test type, and a significance level of 0.05. The significance of each relationship is shown as the t-statistics. Table 17 presents the path coefficient (β), standard error, t-value, and p-value. Then, the results will be used to determine whether the study's proposed hypotheses have been accepted or rejected. According to path coefficient values, perceived maintainability has the highest path coefficient, which is 0.331, followed by perceived security 0.321, perceived ease of use 0.305, and perceived usefulness 0.135.

4.7.3 Coefficient of Determination (R Square)

The coefficient of determination (R square) was investigated after the assessment of path coefficients. This is to assess how accurate an exogenous variable explains and predicts future outcomes. The R square values are between 0 and positive 1. The higher the value of R square, the higher the level of predictive accuracy. According to Hair et al. (2012), 0.75, 0.50, 0.25 respectively describe substantial, moderate, or weak predictive accuracy levels. However, this is only a rough guideline as R square values depend on the discipline and field of study. As shown in Table 17, the R square value in this study is 0.755. This concludes that there is substantial predictive accuracy in this study.

4.7.4 Effect Size (f Square)

The following structural model assessment is the effect size (f Square). The effect size evaluates whether the omitted construct has a substantive impact on the endogenous construct, known as the exogenous latent variable's effect size on the model. SmartPLS 3.0 is used to generate the result of the effect size. Cohen (1988) suggested a guideline for assessing f square, which is 0.02, 0.15, and 0.35 for small, medium, and large effects, respectively. As shown in Table 17, the effect size of the constructs isas follows: perceived usefulness (0.065) indicates small effect size, while perceived ease of use (0.249), perceived security (0.188), and perceived maintainability (0.204) indicates medium effect size in producing R square for intention to use e-AgriFinance mobile application.

4.7.5 Predictive Relevance (Q Square)

Q square of exogenous constructs uses blindfolding procedure via cross-validated redundancy test in SmartPLS 3.0 to generate results. The predictive relevance is carried out to assess how well the path model can predict the observed initial values. Hair et al. (2012) suggested that the Q square should be larger than zero for a reflective endogenous latent variable. As shown in Table 17, 0.578 is the q square value of this study, which is greater than 0. Therefore, this indicates that the exogenous constructs have predictive relevance for the endogenous constructs.

4.7.6 Hypothesis Testing

The path coefficient between latent variables as well as the confidence interval bias is examined in the study to assess the validity of the proposed hypotheses. For the path coefficient, the one-tailed test has three different paths of coefficient rules. This includes 1) when the p-value is less than 0.01, t-value is more than 2.33, 2) when the p-value is less than 0.05, t-value is more than 1.645, and 3) when the p-value is less than 0.10, t-value is more than 1.28 (Hair et al. 2017). The confidence interval bias further confirms the significance and relevance of the structural model through SmartPLS 3.0 bootstrapping test. There is a significant relationship if 0 does not occur within the 95% confidence interval bias results. To conclude, all proposed hypotheses have been supported, and the results are shown below.

H1: Perceived usefulness positively affects the intention to use e-AgriFinance mobile application by suppliers in the Sarawak agriculture sector. H1 is supported as the $\beta = 0.135$, $t = 3.278$, $p < 0.001$, a 95% lower limit confidence interval of 0.062 and a 95% upper limit confidence interval of 0.206.

H2: Perceived ease of use positively affects the intention to use e-AgriFinance mobile application by suppliers in the Sarawak agriculture sector. H2 is supported as the $\beta = 0.305$, $t = 5.669$, $p < 0.001$, a 95% lower limit confidence interval of 0.218 and a 95% upper limit confidence interval of 0.392.

H3: Perceived security positively affects the intention to use e-AgriFinance mobile application by suppliers in the Sarawak agriculture sector. H3 is supported as the $\beta = 0.321$, $t = 5.942$, $p < 0.001$, a 95% lower limit confidence interval of 0.243 and a 95% upper limit confidence interval of 0.412.

H4: Perceived maintainability positively affects the intention to use e-AgriFinance mobile application by suppliers in the Sarawak agriculture sector. H4 is supported as the $\beta = 0.331$, $t = 5.577$, $p < 0.001$, a 95% lower limit confidence interval of 0.232 and a 95% upper limit confidence interval of 0.423.

H5: ICT readiness positively moderates the relationship between perceived usefulness and the intention to use e-AgriFinance mobile application by suppliers in agriculture sector. H5 is not supported. The relationship between perceived usefulness and the intention to use mobile application is weak ($\beta = -0.028$) and is not statistically significant ($t = 1.067$) in the agricultural suppliers of Sarawak when the ICT readiness is low.

H6: ICT readiness positively moderates the relationship between perceived ease of use and the intention to use e-AgriFinance mobile application by suppliers in agriculture sector. H6 is not supported. The relationship between perceived ease of use and the intention to use mobile application is weak ($\beta = 0.009$) and is not statistically significant ($t = 0.221$) in the agricultural suppliers of Sarawak when the ICT readiness is low.

H7: ICT readiness negatively moderates the relationship between perceived security and the intention to use e-AgriFinance mobile application by suppliers in agriculture sector. H7 is supported. The relationship between perceived security and the intention

to use mobile application is statistically significant in the agricultural suppliers of Sarawak when the ICT readiness is high, where the t-value is 1.827.

H8: ICT readiness negatively moderates the relationship between perceived maintainability and the intention to use e-AgriFinance mobile application by suppliers in agriculture sector. H8 is supported. The relationship between perceived maintainability and the intention to use mobile application is statistically significant in the agricultural suppliers of Sarawak when the ICT readiness is high, where the t-value is 1.974.

4.8 Moderator Analysis Assessment

A moderating variable is referred to a third variable that affects the hypothesized relationship between an independent and dependent variable (Cheah et al. 2018). There are three recommended approaches to measure the moderating effects. They are the Product-Indicator Approach (Chin, Marcolin, and Newsted 2003), Two-Stage Approach (Chin, Marcolin, and Newsted 2003), and Orthogonalizing Approach (Henseler and Chin 2010).

Moderator analysis assessment is conducted using a two-stage approach in this study. Chin, Marcolin, and Newsted (2003) created the two-stage approach and Fassot, Henseler and Coelho (2016) as well as Henseler and Fassott (2010) elaborated it. When any of the constructs in the theoretical framework is a formative construct, this approach is suitable to use. The two-stage approach is still recommended whether the formative construct is an exogenous or moderating variable (Henseler and Chin 2010). This approach can also be used to study the relationship between the reflective measures. On top of that, this approach has a higher statistical power and hence it is more accurate (Ramayah et al. 2018). The main reason of using the two-stage approach is when the focus of the analysis is to investigate whether the moderator shows a significant effect on the relationship.

First step is to assess the change in R square. Analyzing the change in R square is an important step (Ramayah et al. 2018). The new R square must be assessed after the moderating interaction effect is added to the path model. The previous R square for the main effect model is 0.755. In the interaction effect model, the R square is 0.901 now. According to Hair et al. (2012), this shows that there is substantial predictive

accuracy in this study with the interaction effect. The R square change of 0.146 indicates that with the addition of one interaction term, the R square has changed about 14.6% (additional variance).

The second step of moderator analysis assessment is to assess the effect size, the f square. Kenny (2016) suggested a guideline for assessing f square, which is 0.005, 0.01 and 0.025 for small, medium, and large effect size, respectively. The moderating construct of ICT readiness is classified as having a small effect size (0.005) on the relationship between perceived usefulness and the intention to use mobile application. Also, the moderating construct of ICT readiness is classified as having a very small effect size (≤ 0.001) on the relationship between perceived ease of use and the intention to use mobile application. On the other hand, the moderating construct of ICT readiness is classified as having a medium effect size (0.018) on the relationship between perceived security and the intention to use mobile application. Besides, the moderating construct of ICT readiness is also classified as having a medium effect size (0.019) on the relationship between perceived maintainability and the intention to use mobile application.

Table 18 shows the moderator analysis results. The path coefficient for the moderating variable of ICT readiness on the relationship between perceived usefulness and intention to use mobile application is -0.028 with a standard error of 0.025. The t-value is 1.067, thus it does not meet the threshold value of 1.645. From these two values, it can be concluded that the moderating hypothesis of H5 is not supported.

The path coefficient for the moderating variable of ICT readiness on the relationship between perceived ease of use and intention to use mobile application is 0.009 with a standard error of 0.024. The t-value is 0.221 and it does not meet the threshold value of 1.645. Thus, H6 is not supported.

The path coefficient for the moderating variable of ICT readiness on the relationship between perceived security and intention to use mobile application is -0.049 with a standard error of 0.027. The t-value is 1.827. It is statistically significant as the t-values exceeded the threshold value of 1.645 but practically it may not be significant as the interaction effect is negative and less than 0.1. The negative relationship between perceived security and the intention to use mobile application will be stronger when

ICT readiness is lower. Therefore, our hypothesis is supported with the indication of the significant t-value result.

The path coefficient for the moderating variable of ICT readiness on the relationship between perceived maintainability and intention to use mobile application is -0.053 with a standard error of 0.027. The t-value is 1.974. It is statistically significant as the t-values exceeded the threshold value of 1.645 but practically it may not be significant as the interaction effect is negative and less than 0.1. The negative relationship between perceived maintainability and the intention to use mobile application will be stronger when ICT readiness is lower. Thus, our hypothesis is supported with the indication of the significant t-value result.

Table 17. Hypothesis Testing Results

Hypothesis	**Relationship**	**Path Coefficient (Beta)**	**Std. Error**	**t value**	**p value**	**95% CI LL**	**95% CI UL**	**Decision**	R^2	f^2	Q^2
H1	PU -> IU (+)	0.135	0.043	3.278***	≤ 0.001	0.062	0.206	Supported	0.755	0.065	0.578
H2	PEoU -> IU (+)	0.305	0.053	5.669***	≤ 0.001	0.218	0.392	Supported		0.249	
H3	PS -> IU (+)	0.321	0.053	5.942***	≤ 0.001	0.243	0.412	Supported		0.188	
H4	PM -> IU (+)	0.331	0.057	5.577***	≤ 0.001	0.232	0.423	Supported		0.204	

Note: *p<0.05, **p<0.01, ***p<0.001

Note: CI LL: Confidence Interval Lower Limit, CI UL: Confidence Interval Upper Limit

Table 18. Moderation Analysis Results

Hypothesis	**Relationship**	**Path Coefficient**	**Std. Error**	**t value**	**Decision**	R^2	f^2
H5	PU*ICT -> IU	-0.028	0.025	1.067	Not Supported	0.901	0.005
H6	PEoU*ICT -> IU	0.009	0.024	0.221	Not Supported		≤ 0.001
H7	PS*ICT -> IU	-0.049	0.027	1.827*	Supported		0.018
H8	PM*ICT -> IU	-0.053	0.027	1.974*	Supported		0.019

Note: *p<0.05, **p<0.01, ***p<0.001

Note: CI LL: Confidence Interval Lower Limit, CI UL: Confidence Interval Upper Limit

4.9 Discussion of the Results

This section explains the main findings and the hypotheses of this study according to the research questions in Chapter One.

4.9.1 Summary of the Main Findings

The hypotheses results are shown in Table 19. The data of this study support six hypotheses (H1, H2, H3, H4, H7 and H8) while two hypotheses (H5 and H6) are not supported. The system quality attributes that affect the Sarawak agricultural suppliers' intention to use mobile application are perceived usefulness, perceived ease of use, perceived security and perceived maintainability. However, the moderating variable, which is ICT readiness only moderates the relationship between perceived security and the intention to use mobile application, and the relationship between perceived maintainability and the intention to use mobile application among the suppliers with high ICT readiness.

Table 19. Summary Results of Research Questions and Hypotheses

Research Questions and Hypotheses Statements		**Results**
Research Questions 1: What is the relationship between system quality attributes and the intention to use mobile application for suppliers of Sarawak's agriculture sector?		
H1	Perceived usefulness positively affects the intention to use e-AgriFinance mobile application by suppliers in the Sarawak agriculture sector.	Supported
H2	Perceived ease of use positively affects the intention to use e-AgriFinance mobile application by suppliers in the Sarawak agriculture sector.	Supported
H3	Perceived security positively affects the intention to use e-AgriFinance mobile application by suppliers in the Sarawak agriculture sector.	Supported
H4	Perceived maintainability positively affects the intention to use e-AgriFinance mobile application by suppliers in the Sarawak agriculture sector.	Supported

Research Questions 2: How does ICT readiness moderate the relationship between system quality attributes and the intention to use mobile application among the suppliers in the Sarawak's agriculture sector?		
H5	ICT readiness positively moderates the relationship between perceived usefulness and the intention to use e-AgriFinance mobile application by suppliers in agriculture sector.	Not Supported
H6	ICT readiness positively moderates the relationship between perceived ease of use and the intention to use e-AgriFinance mobile application by suppliers in agriculture sector.	Not Supported
H7	ICT readiness negatively moderates the relationship between perceived security and the intention to use e-AgriFinance mobile application by suppliers in agriculture sector.	Supported
H8	ICT readiness negatively moderates the relationship between perceived maintainability and the intention to use e-AgriFinance mobile application by suppliers in agriculture sector.	Supported

4.9.2 Discussion on the Main Findings

This study aims to determine the relationship between system quality attributes of the e-AgriFinance and the intention to use mobile application for suppliers of Sarawak's agriculture sector. At the same time, it is to investigate the moderating effect of ICT readiness on the relationship between system quality attributes of the e-AgriFinance and the intention to use mobile application among suppliers in the agriculture sector. The models that are being adopted to develop the conceptual framework of this study are ISO 25010 System Quality Model and Technology Acceptance Model (TAM).

Data were collected from the suppliers of the agriculture sector in Sarawak. The list of suppliers was obtained from Malaysia Pepper Board (MPB), Malaysian Palm Oil Board (MPOB), and Malaysia Cocoa Board (MCB). The geographical scope in this study involved a total of nine divisions in Sarawak, including Kuching, Sibu, Bintulu, Samarahan, Sri Aman, Betong, Sarikei, Kapit, and Mukah. A total of 276 questionnaires were collected, and they were analysed using partial least squares structural equation modeling (PLS-SEM). The SPSS statistics' database was used to

generate descriptive statistical reports of this study as well as to check for every variables' missing data, and to generate analysis for the normality test, common method bias and collinearity test. This study also used Partial Least Squares Structural Equation Modeling (PLS-SEM) to assess the validity and reliability of the measurement and structural models. It is interesting to note that the data analyses in this study found that all hypotheses are supported except for H5 and H6.

Research Question 1: What is the relationship between system quality attributes of the e-AgriFinance and the intention to use mobile application for suppliers of Sarawak's agriculture sector?

The current study found that perceived usefulness, perceived ease of use, perceived security and perceived maintainability are the system quality attributes of the e-AgriFinance that affects the intention to use mobile application for suppliers of Sarawak' agriculture sector. The relatively stronger variable in determining the intention to use e-AgriFinance mobile application by the suppliers of the agriculture sector in Sarawak is perceived maintainability as it has the highest path coefficient (0.331).

Research Question 2: How does ICT readiness moderate the relationship between system quality attributes of the e-AgriFinance and the intention to use mobile application for suppliers in the Sarawak's agriculture sector?

The result of this study indicates that the ICT readiness does not significantly moderates all the variables but only significantly moderates the relationship between perceived security and the intention to use mobile application, and the relationship between perceived maintainability and the intention to use mobile application when the ICT readiness is high. It can thus be suggested that the relationship between perceived security and the intention to use mobile application is strong when the ICT readiness is high. Also, the relationship between perceived maintainability and the intention to use mobile application is strong when the ICT readiness is high. On the contrary, ICT readiness does not moderate the relationship between perceived usefulness and the intention to use mobile application, and it also does not moderate

the relationship between perceived ease of use and the intention to use mobile application. Therefore, it can be suggested that if the ICT readiness is low, the relationship between perceived usefulness and the intention to use mobile application and the relationship between perceived ease of use and the intention to use mobile application are not significant.

4.9.2.1 Perceived Usefulness

- **H1: Perceived usefulness positively affects the intention to use e-AgriFinance mobile application by suppliers in the agriculture sector.**
  Based on TAM, the study finds that perceived usefulness is one of the factors that affects the user's intention to use a particular system (Davis et al. 1989). User's acceptance and intention to use a mobile application will most likely increase when they perceive the mobile application as useful (Phua, Wong, and Abu 2011). The result of this study indicates that perceived usefulness positively affects the intention to use e-AgriFinance mobile application by suppliers in the Sarawak agriculture sector. Perceived usefulness measures the e-AgriFinance mobile application by how it can improve the user's work performance. For example, the suppliers in Sarawak agriculture sector perceive that the use of e-AgriFinance mobile application would improve their daily agriculture activities. In this study, the finding is consistent with other studies that investigate the relationship between perceived usefulness and intention to use or adopt new technology (Kabir, Saidin, and Ahmi 2017; Moslehpour et al. 2018).

4.9.2.2 Perceived Ease of Use

- **H2: Perceived ease of use positively affects the intention to use e-AgriFinance mobile application by suppliers in the agriculture sector.**
  In reviewing the literature, TAM noted perceived ease of use as another factor that influences the user's intention to use a particular system (Davis et al. 1989). Specifically, the perceived ease of use for users on the system significantly influences users' intention to use, and thus positively affects the actual use of the system. Perceived ease of use refers to the simplicity of the mobile

application, where the suppliers will have the intention to use if they perceive that the mobile application is easy to use. For example, the intention to use e-AgriFinance mobile application by the suppliers in the Sarawak agriculture sector will be higher if the mobile application is simple, easy to use, and the interaction with the platform is understandable. The current study found that perceived ease of use has a positive relationship on the intention to use e-AgriFinance mobile application by the suppliers in the Sarawak agriculture sector. The result in this study accords with prior literature, which showed that perceived ease of use positively affects the intention to use a particular system (Kwak 2014; Fard and Marvi 2019; Ming, Chen, and Tu 2021).

4.9.2.3 Perceived Security

- **H3: Perceived security positively affects the intention to use e-AgriFinance mobile application by suppliers in the agriculture sector.**

  As mentioned in the literature review, perceived security is regarded as one of the important system quality attributes as the data of users is being protected from any leakage and for the privacy of users (Bhattacharya, Gulla, and Gupta 2012). This shows the users' perceived security positively affects the intention to use of the user. In this study, perceived security refers to the assurance of safety for suppliers in the Sarawak agriculture sector to perform mobile activities such as financial transactions through e-AgriFinance mobile application. Also, perceived security shows how well can the stored private information of users be protected from unauthorized use such as the misuse of credit cards and hacking. The result obtained in this study indicates that perceived security has a positive relationship on the intention to use e-AgriFinance mobile application by the suppliers in the Sarawak agriculture sector. It is aligned with previous studies, where perceived security positively affected the intention to use mobile application (Acharya and Sinha 2013; Moturi and Mbiwa 2015; Echalar and Subion 2018).

4.9.2.4 Perceived Maintainability

- **H4: Perceived maintainability positively affects the intention to use e-AgriFinance mobile application by suppliers in the agriculture sector.**

  Based on ISO 25010, the study has noted on the importance of perceived maintainability on the intention to use of a particular system. It also shows the efficiency of the system or mobile application being revised and updated (Haboush et al. 2014). In this research, perceived maintainability is referred to how well can the e-AgriFinance mobile application be maintained, changed and improved in time to come. For example, the e-AgriFinance mobile application should be well-maintained and able to provide updated services and information to the users. The result of this study shows that perceived maintainability has a positive relationship on the intention to use e-AgriFinance mobile application by the suppliers in the Sarawak agriculture sector. Consistent with the literature, this study found that perceived maintainability positively affects the intention to use mobile application (Idri, Bachiri, and Fernandez-Aleman 2016; Dewi, Ngaliah, and Rochimah 2020).

4.9.2.5 ICT Readiness as the Moderator

- **H5: ICT readiness positively moderates the relationship between perceived usefulness and the intention to use e-AgriFinance mobile application by suppliers in agriculture sector.**

  H5 proposes that ICT readiness moderates the relationship between perceived usefulness and intention to use mobile application. It proposes that the direct relationship between perceived usefulness and intention to use mobile application is expected to be stronger when the ICT readiness is high. With reference to Table 18, the interaction term is -0.028 with t-value of 1.067. The R^2 values change from 0.755 to 0.901. It indicates an additional variance of 0.146 with the addition of an interaction term. Moreover, the f square of this moderating variable is 0.005. It can be concluded that ICT readiness does not have a moderating impact on the relationship between perceived usefulness and intention to use mobile application. Thus, the hypothesis is not supported.

- **H6: ICT readiness positively moderates the relationship between perceived ease of use and the intention to use e-AgriFinance mobile application by suppliers in agriculture sector.**

  H6 proposes that ICT readiness moderates the relationship between perceived ease of use and intention to use mobile application. It proposes that the direct relationship between perceived ease of use and intention to use mobile application is expected to be stronger when the ICT readiness is high. With reference to Table 18, the interaction term is 0.009 with t-value of 0.221. The R^2 values change from 0.755 to 0.901. It indicates an additional variance of 0.146 with the addition of an interaction term. Moreover, the f square of this moderating variable is ≤0.001. It can be concluded that ICT readiness does not have a moderating impact on the relationship between perceived ease of use and intention to use mobile application. Thus, the hypothesis is not supported.

- **H7: ICT readiness negatively moderates the relationship between perceived security and the intention to use e-AgriFinance mobile application by suppliers in agriculture sector.**

  H7 proposes that ICT readiness moderates the relationship between perceived security and intention to use mobile application. It proposes that the direct relationship between perceived security and intention to use mobile application is expected to be stronger when the ICT readiness is high. With reference to Table 18, the path coefficient is -0.049 with t-value of 1.827. The R^2 values change from 0.755 to 0.901. It indicates an additional variance of 0.146 with the addition of an interaction term. Moreover, the f square of this moderating variable is 0.018. It can be concluded that ICT readiness does have a moderating impact on the relationship between perceived security and intention to use mobile application but practically it may not be significant as the interaction term is negative and less than 0.1. Thus, the hypothesis is supported.

- **H8: ICT readiness negatively moderates the relationship between perceived maintainability and the intention to use e-AgriFinance mobile application by suppliers in agriculture sector.**

  H8 proposes that ICT readiness moderates the relationship between perceived maintainability and intention to use mobile application. It proposes that the direct relationship between perceived maintainability and intention to use mobile application is expected to be stronger when the ICT readiness is high. With reference to Table 18, the path coefficient is -0.053 with t-value of 1.974. The R^2 change from 0.755 to 0.901. It indicates an additional variance of 0.146 with the addition of an interaction term. Moreover, the f square of this moderating variable is 0.019. It can be concluded that ICT readiness does have a moderating impact on the relationship between perceived security and intention to use mobile application but practically it may not be significant as the interaction term is negative and less than 0.1. Thus, the hypothesis is supported.

Information systems' physical infrastructure is a relatively important component in an information society (Kordha and Ahmetah 2011). Consistent with the literature, there is a significant moderating effect on the relationship between perceived security and the intention to use e-AgriFinance mobile application among the suppliers. Besides, there is also a significant moderating effect on the relationship between perceived maintainability and the intention to use e-AgriFinance mobile application among the suppliers. There is a positive relationship between perceived security and the intention to use e-AgriFinance mobile application, and a positive relationship between perceived maintainability and the intention to use e-AgriFinance mobile application, when the level of ICT readiness is consistent such that the network speed and connectivity are good. These results match those observed in earlier studies where ICT readiness has an impact on the relationship between system quality attributes and the intention to use e-AgriFinance mobile application (Asogwa, Ugwu, and Ugwuanyi 2014; Moturi and Mbiwa 2015; Rahman, Islam, and Dayani 2017).

On the other hand, the result indicates that ICT readiness does not have a significant moderating effect on the relationship between perceived usefulness and the intention to use e-AgriFinance mobile application. Also, there is no significant moderating

effect of ICT readiness on the relationship between perceived ease of use and the intention to use e-AgriFinance mobile application. This study has been unable to demonstrate that ICT readiness moderates the relationship between perceived usefulness and intention to use e-AgriFinance mobile application, and the relationship between perceived ease of use and intention to use e-AgriFinance mobile application.

This rather contradictory result may be due to the perspectives and responses of different groups of suppliers towards ICT readiness. The suppliers do not take ICT readiness into consideration as they may think that the mobile application could bring them benefits in one way or another (Emeana, Trenchard, and Dehnen-Schmutz 2020). The use of mobile application in agriculture sector helps gather, store, and analyse data easily, thus improving management performance (Castle, Lubben and Luck 2015). Also, the use of mobile application in agriculture sector unites the agricultural value chain actors including suppliers, farmers, and distributors (Elijah et al. 2017). The agricultural value chain actors could exchange information and establish cooperation through the use of mobile application (Walter et al. 2017). Furthermore, the use of mobile application could provides effective and efficient financial services especially to those who are excluded from mainstream financial services such as banking and insurance (Emeana, Trenchard, and Dehnen-Schmutz 2020).

Another reason could also be the presence of confounding normative influences in the community. Normative influence refers to an individual conforming to the norms of the reference group due to the influence exerted on them (Joe et al. 2017). The normative influence in this hypothesis relates to the government and banks that play a significant role in making known the benefits and use of mobile application among the suppliers in agriculture sector of Sarawak (Bank Negara Malaysia 2011). A possible explanation of this contradictory result may be due to the normative influence as it is a key component that promotes the use of mobile technology among the users (Bongomin and Munene 2020). The findings of this research demonstrated a different explanation on the moderating effect of the relationship between perceived usefulness, perceived ease of use and the intention to use e-AgriFinance mobile application. Therefore, ICT readiness does not bring impact on the relationship among the perceived usefulness, perceived ease of use and the intention to use mobile application.

4.10 Research Implications

This section describes the implications of this study. Two facets of implications which are the theoretical implications and managerial implications are further discussed in this section.

4.10.1 Theoretical Implications

Overall, the results of this study are able to strengthen and add to the body of knowledge of system quality attributes on the intention to use e-AgriFinance mobile application among the suppliers in Sarawak. The principal theoretical implication of this study that contributes to the literature is the application of TAM and ISO 25010 system quality model in explaining the intention to use mobile application in the agriculture sector. Moreover, the findings have significant implications on the understanding of the role of perceived usefulness, perceived ease of use, perceived security, and perceived maintainability in influencing and affecting the intention to use e-AgriFinance mobile application. It is interesting to note that the perceived maintainability is the key determinant on the intention to use the e-AgriFinance mobile application.

The theoretical implication of this study is the possibility to fill the research gap in the application of TAM and ISO 25010 system quality model in analysing the intention to use mobile application by the suppliers of agriculture sector. The highlight of this study is the attributes adopted from both TAM and ISO 25010 system quality model in a single research model to determine the intention to use e-AgriFinance mobile application by the suppliers. This study found that all four variables have a positive effect on the intention to use e-AgriFinance mobile application. Thus, the positive and significant relationships strengthen the understanding of the variable in influencing the suppliers' intention to use mobile application in the agriculture sector from the context of Sarawak. As a result, it directly contributes to the use of TAM and ISO 25010 system quality model in a different perspective and context. The significant relationships strengthen the understanding of the system quality attributes of mobile application in the agriculture sector of Sarawak.

The following theoretical implication of this study empirically confirms the relationship between perceived usefulness, perceived ease of use, perceived security,

and perceived maintainability to the intention to use mobile application. One of the research objectives is to determine the relationship between system quality attributes and the intention to use mobile application. The findings of this research show that the system quality attributes positively impact the intention to use mobile application. This adds to the body of knowledge by confirming the roles of these attributes from an Eastern context. Although past studies have utilized the TAM theoretical framework, the focus were on the education sector, healthcare, and banking sector (Lopez 2013; Srivastava et al. 2013; Zaman et al. 2013, Suresh et al. 2016, Robinson 2019; Dhagarra, Goswami, and Kumar 2020). In contrast, this study focuses on the context of agriculture sector in Sarawak. This study only links two variables from TAM and two variables from ISO 25010 framework. The additional attributes from ISO 25010 model strengthen the framework and thus contributes to the TAM model.

In addition, this research is among the few technology acceptance studies that investigates the moderating role of ICT readiness towards system quality attributes and the intention to use. The moderating effects of ICT readiness is adopted in this study as the population in Sarawak is widely spread out and ICT is viewed as a core catalyst in shaping the development of the people of rural areas (Rosliah and Hassan 2012). People living in rural areas have historically been facing digital exclusion because of the lack of ICT readiness in their areas (Horn et al. 2018). From the moderator hypothesis, it was found that ICT readiness moderates only the relationship between perceived security, perceived maintainability and the intention to use mobile application. Contrarily, ICT readiness does not moderate the relationship between perceived usefulness, perceived ease of use and the intention to use mobile application. The supported relationships of the moderating variable contribute to the TAM theory as there could possibly be a significant moderating role of ICT readiness in technology acceptance.

4.10.2 Managerial Implications

The findings of this research provide insights and significant implications for practice. The e-AgriFinance mobile application could possibly benefit the Sarawak government, and the value chain actors of agriculture sector that includes farmers, suppliers, and the distributors. The results of this research support the idea of developing a suitable

digital finance mobile application in the agriculture sector of Sarawak by the government, policy makers, developers, and banks. The empirical findings of this study can provide insights and values to these stakeholders to improve the effectiveness of the use of mobile application.

First and foremost, it is empirically established and highlighted that the perceived maintainability is the relatively stronger variable in determining the intention to use e-AgriFinance mobile application by the suppliers of agriculture sector in Sarawak. Thus, stakeholders such as developers and banks must ensure that the mobile application and its functions are updated and well-maintained. The level of efficiency and effectiveness to revise and update the applications by the developers and banks are important. The suppliers believe that this could help them to have concise and updated information that could benefit them at work. This is vital as it will attract the suppliers of the agriculture sector to use mobile application to conduct their businesses. By doing so, this can potentially increase the intention to use and even the usage of the mobile application among the suppliers.

Perceived usefulness is also a determinant of the intention to use mobile application. This finding shows that the intention to use the mobile application is higher when the mobile application could offer useful features and services to suppliers of agriculture sector. For example, the suppliers could perform their daily activities and businesses effectively and efficiently using the mobile application. Also, the government should focus on educating the suppliers about the convenience of the mobile application, encouraging the suppliers to adopt the mobile application, and creating awareness towards its practical benefits. Thus, the developers and government must consider the attributes of perceived usefulness as it can potentially cultivate the intention to use mobile application.

Moreover, perceived ease of use is also an important determinant in the intention to use mobile application. According to the findings, it is suggested that stakeholders such as banks should ensure sufficient help and support that are readily available in assisting the suppliers in using the mobile application. For instance, the employees in the bank should be well-equipped to help the suppliers to set up the mobile application. More essentially, the developers should develop an user-friendly mobile application so that the suppliers could use and access it easily. Thus, different stakeholders can

work together to empower the suppliers so they could fully utilise the mobile application without fail.

Besides, perceived security is also one of the determinants in the intention to use mobile application in this study. The finding indicates that policymakers should ensure the safety and security of the mobile application. Throughout the process of obtaining questionnaires, the suppliers voiced their opinions such that if the mobile application is safe, they will choose to use it. However, some of the suppliers implied that they will not be providing their personal information as a safety precaution. In order to maximise the intention to use of mobile application, different parties should work together to ensure that the mobile application has the highest level of security. On top of that, well-deserved financial security of the mobile application must be ensured.

The findings reported here shed new light where there is significant moderating effect of ICT readiness on the relationship between perceived security, perceived maintainability and the intention to use mobile application. The insights gained from this study indicate that it is vital for the Malaysian government to provide accessible and affordable internet connections for the suppliers. With high ICT readiness, there will be a significant relationship between perceived security, perceived maintainability and the intention to use mobile application. The research is also well-timed and aligns with the initiative and interest of the Sarawak government to go digital in the agriculture sector, which is evident from the Sarawak Digital Economy Strategy 2018-2022. The planning of establishing fiber connection and improving the 3G and 4G connection is highly recommended in order to bring a significant moderating effect of ICT on the relationship between system quality attributes and the intention to use mobile application.

On the contrary, the moderating role of ICT readiness has been rejected in relation to the relationship between perceived usefulness, perceived ease of use and intention to use mobile application. More specifically, ICT readiness does not have a moderating effect on the relationship between perceived usefulness and intention to use mobile application. Also, ICT readiness does not have a moderating effect on the relationship between perceived ease of use and intention to use mobile application. In this study, it is found that ICT is inaccessible for some of the suppliers. The development of balanced urban and rural areas from different angles such as ICT readiness is not

ensured and there is a digital divide (Rosliah and Hassan 2012). Thus, the Sarawak government can put in more effort to bring easily accessible ICT infrastructure to the suppliers in Sarawak in both rural and urban areas in order to have a significant relationship between system quality attributes and intention to use mobile application.

The findings of this research provide insights for potential methodological contribution. This study adopted the quantitative approach and the questionnaire was the main method for data collection. The quota sampling approach was adopted, and this study was based on the proportion of the urban and rural population, where 40% of agriculture suppliers were from the rural areas and 60% from the urban areas. Therefore, if there is no sampling frame available, it is suggested for future research to adopt non-probability sampling using quota sampling. This experience may be useful for future studies as quota sampling has an adequate representation of all important sub-groups in the sample (Gorny and Napierala 2016).

There are a few implications from this study as the state of Sarawak is moving towards a digital world especially in the agriculture sector. In this study, it was found that 34.4% of the respondents have less than 2 months of experience in using a mobile application. It can be suggested that the government should create awareness about the mobile application's practical benefits and provide easy and straightforward instructions to the suppliers to understand the use of the mobile application. It is also interesting to highlight that 3.3% of the respondents from rural areas has no internet connection while 39.8% of them are still having 3G mobile network. Thus, it can be recommended that the Sarawak government could invest in providing accessible and affordable internet connections for the suppliers in both urban and rural areas. Also, it is recommended that the Sarawak government enhances the digital infrastructure such as improving the current 3G and 4G connections. Hopefully the proposed implications in this paper may help to prepare Sarawak’s agriculture sector in finding suitable approaches and ways to go digital such as adopting mobile application into the existing settings, if deployed properly.

4.11 Summary of the Chapter

Descriptive statistics, missing data, outliers, and common method bias were conducted using SPSS. On the other hand, the assessment of the measurement model and structural model was conducted with SmartPLS 3.0. Measurement model assessment included internal consistency reliability, indicator reliability, convergent validity, and discriminant validity. All the criteria and threshold values were met. Hence, it shows that the model is valid and ready for an assessment of the structural model. Then, a structural model assessment was conducted. Structural model assessment included a lateral collinearity test, path coefficient test, coefficient of determination (R Square), effect size (f Square), predictive relevance (Q Square), and hypothesis testing. It was found that all the hypotheses were supported, except for two hypotheses which are H5 and H6.

CHAPTER FIVE: CONCLUSION

5.1 Chapter Overview

Chapter Five begins by laying out the conclusion of the study. It will then go on to the research limitations and recommendations for the future studies.

5.2 Conclusion

This study sets out to present empirical findings to the intention to use mobile application among the agricultural suppliers in Sarawak. Two research questions were formed in this study. They are (1) What is the relationship between system quality attributes of the e-AgriFinance and the intention to use mobile application for suppliers of Sarawak's agriculture sector? (2) How does ICT readiness moderate the relationship between system quality attributes of the e-AgriFinance and the intention to use mobile application for suppliers in the Sarawak's agriculture sector? The first research objective of the study is to determine the relationship between the system quality attributes and the intention to use mobile application by the suppliers of the agriculture sector of Sarawak. On top of that, the second objective is to investigate the moderating effect of ICT readiness on the relationship between system quality attributes and the intention to use mobile application among the suppliers in the agriculture sector.

To investigate the research objectives, technology acceptance model and ISO 25010 model were utilized in this study as the theoretical framework. A comprehensive literature review on the theories of technology acceptance model, ISO 25010 system quality model and the ICT readiness were conducted. A total of four determinants were adopted and investigated to atain this research objective. They are perceived usefulness, perceived ease of use, perceived security, and perceived maintainability. These determinants were derived from the TAM and ISO 25010 model. In this study, it was found that perceived usefulness, perceived ease of use, perceived security and perceived maintainability have a positive impact on the intention to use e-AgriFinance mobile application.

The second objective of this study was to investigate the moderating effect of ICT readiness on the relationship between system quality attributes and the intention to use mobile application of suppliers in the agriculture sector. The role of moderating

variable, ICT readiness is one of the key contributions as this is the first study to use ICT readiness as a moderating variable in moderating the relationship between system quality attributes and the intention to use mobile application. The motivation to include ICT readiness in this study is driven by the fact the population in Sarawak is widely spread out where 54% of the population lives in urban areas while 46% lives in rural areas. The ICT in rural areas is not widely and readily accessible. Thus, it might bring a moderating effect on the relationship between system quality attributes and the intention to use mobile application. A total of four hypotheses were proposed to attain this research objective. The results of this investigation showed that ICT readiness has a significant moderating effect on the relationship between perceived security and the intention to use e-AgriFinance mobile application, and the relationship between perceived maintainability and the intention to use e-AgriFinance mobile application. However, the moderating effect on the relationship between perceived usefulness and the intention to use e-AgriFinance, and the relationship between perceived ease of use and the intention to use e-AgriFinance mobile application were rejected. This further highlights the moderating role of ICT readiness as a contributing factor to this study as no other study has utilized ICT readiness as the moderator.

As the state of Sarawak is moving towards a digital world especially in the agriculture sector, various boards and government agencies should cooperate to provide support for the agriculture sector and work towards a digital world. Furthermore, the confirmed role of the determinants can provide valuable insights and guide for Sarawak's stakeholders that are seeking ways to bring agriculture sector towards a digital world. In short, the findings of this study are key towards the interest of the Sarawak government, non-governmental organizations, policymakers, and the banking sector to create a comprehensive digital platform in the agriculture sector of Sarawak and beyond.

To summarize, the conclusion statements are as follows:-

- This study has provided empirical findings to the intention to use mobile application among the suppliers in Sarawak agriculture sector.
- To investigate the first research question, four hypotheses were formed and it was found that perceived usefulness, perceived ease of use, perceived security and perceived maintainability has a positive impact on the intention to use e-AgriFinance mobile application. Perceived maintainability have been shown to be a key determinant of the intention to use the e-AgriFinance mobile application.
- To attain the second research objective, additional four hypothesis were formed and it was found that 2 out of 4 hypotheses were supported. It was found that ICT readiness has a significant moderating effect on the relationship between perceived security and the intention to use e-AgriFinance mobile application, and the relationship between perceived maintainability and the intention to use e-AgriFinance mobile application.
- The findings of this research are key towards the interest of the Sarawak government, non-governmental organizations, policymakers, and the banking sector to create a comprehensive digital platform in the agriculture sector of Sarawak and beyond.

5.3 Research Limitations and Recommendations for Future Research

This section discusses the limitation of this study.

The scope of this study was limited by the fact that this study focuses on the context of Sarawak, Malaysia. Similar or close characteristics of the agricultural suppliers from other states or countries could be generalised to this study as they share similar sociocultural environment and background conditions upon which generalization it depends on (Firestone 1993). However, it is not fully proven that the research findings of this study can be generalised to all agricultural suppliers in other states in Malaysia and other countries.

Next, the recommendations for future research that plan to investigate the effect of system quality attributes on the intention to use mobile application are highlighted as follows:-

Investigate other factors that may have an influence on the intention to use mobile application of suppliers

This research focuses on the relationship between perceived usefulness, perceived ease of use, perceived security, and perceived maintainability on the intention to use mobile application. There may be some differences in terms of the significance in the relationships investigated in this study if other relevant factor such as perceived cost is included. The adoption of mobile application may be new to some suppliers and it may incur extra cost for the suppliers. Thus, there may be significant relationship between the variables. As a result, future studies are recommended to explore and investigate relevant variables to better improve the model.

A systematic investigation of mobile application adoption in agriculture sector

Greater and deeper insight into research on mobile application adoption specifically in agriculture sector context has the potential to support more mobile application adoption. While this study focuses on investigating the effect of system quality attributes on the intention to use mobile application, further research on the systematic investigations of associated benefits and challenges of mobile application adoption are vital to gain deeper insights into the purposes and the roles of mobile application in the agriculture sector (Baram 2014). Understanding the potential impact of mobile application adoption helps evaluate the importance and usefulness of the mobile application.

Improvements on research methodologies

Improvements on research methodologies can be made in future research in the following areas:

Although the findings of this research found meaningful insights with non-probability sampling using quota sampling, future studies are recommended to adopt probability sampling such as random sampling and systematic sampling, where the list of suppliers can be obtained (Lee, Hsieh, and Hsu 2011). Additionally, the data collection with the use of questionnaire was collected from the agricultural suppliers in Sarawak. This would be a fruitful area for future research work where other supply chain actors could be included (Sungur-Gui and Ates 2021). Thus, future empirical research is

recommended to use diverse samples that includes other supply chain actors such as the farmers and the distributors.

Provide a prototype for the respondents

Our results were built according to the responses of participants who had no direct experience with the e-AgriFinance mobile application. Considerably, a prototype will need to be shown to the respondents before carrying out survey in future research. This is to ensure the participants have direct experience with the e-AgriFinance mobile application besides improving the rigor of the research design (Lee e al. 2020).

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“Every reasonable effort has been made to acknowledge the owners of copyright material. I would be pleased to hear from any copyright owner who has been omitted or incorrectly acknowledged.”

APPENDICES

Appendix A. Ethics Approval Letter

Research Office at Curtin

GPO Box U1987
Perth Western Australia 6845

Telephone +61 8 9266 7863
Facsimile +61 8 9266 3793
Web research.curtin.edu.au

12-Mar-2020

Name: Raymond Chiong
Department/School: Curtin International
Email: Raymond.Chiong@curtin.edu.au

Dear Raymond Chiong

RE: Ethics Office approval
Approval number: HRE2020-0119

Thank you for submitting your application to the Human Research Ethics Office for the project **System Quality Attributes on the Intention to Use E-AgriFinance: Perspective of Agricultural Suppliers in Sarawak**.

Your application was reviewed through the Curtin University Negligible risk review process.

The review outcome is: **Approved**.

Your proposal meets the requirements described in the National Health and Medical Research Council's (NHMRC) *National Statement on Ethical Conduct in Human Research (2007)*.

Approval is granted for a period of one year from **12-Mar-2020** to **11-Mar-2021**. Continuation of approval will be granted on an annual basis following submission of an annual report.

Personnel authorised to work on this project:

Name	Role
Lim, Nyet Kah	Student
Chiong, Raymond	CI
Yap, CS Yap	Supervisor
Gopal, Lenin	Supervisor
Wong, Kwong	Supervisor

Approved documents:

Document

Standard conditions of approval

1. Research must be conducted according to the approved proposal
2. Report in a timely manner anything that might warrant review of ethical approval of the project including:
   - proposed changes to the approved proposal or conduct of the study
   - unanticipated problems that might affect continued ethical acceptability of the project
   - major deviations from the approved proposal and/or regulatory guidelines
   - serious adverse events

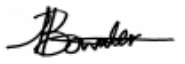
3. Amendments to the proposal must be approved by the Human Research Ethics Office before they are implemented (except where an amendment is undertaken to eliminate an immediate risk to participants)
4. An annual progress report must be submitted to the Human Research Ethics Office on or before the anniversary of approval and a completion report submitted on completion of the project
5. Personnel working on this project must be adequately qualified by education, training and experience for their role, or supervised
6. Personnel must disclose any actual or potential conflicts of interest, including any financial or other interest or affiliation, that bears on this project
7. Changes to personnel working on this project must be reported to the Human Research Ethics Office
8. Data and primary materials must be retained and stored in accordance with the Western Australian University Sector Disposal Authority (WAUSDA) and the Curtin University Research Data and Primary Materials policy
9. Where practicable, results of the research should be made available to the research participants in a timely and clear manner
10. Unless prohibited by contractual obligations, results of the research should be disseminated in a manner that will allow public scrutiny; the Human Research Ethics Office must be informed of any constraints on publication
11. Approval is dependent upon ongoing compliance of the research with the Australian Code for the Responsible Conduct of Research, the National Statement on Ethical Conduct in Human Research, applicable legal requirements, and with Curtin University policies, procedures and governance requirements
12. The Human Research Ethics Office may conduct audits on a portion of approved projects.

Special Conditions of Approval
Nil

This letter constitutes low risk/negligible risk approval only. This project may not proceed until you have met all of the Curtin University research governance requirements.

Should you have any queries regarding consideration of your project, please contact the Ethics Support Officer for your faculty or the Ethics Office at hrec@curtin.edu.au or on 9266 2784.

Yours sincerely



Amy Bowater
Ethics, Team Lead

Appendix B. Participant Information Sheet (English Version)

Participant Information Statement

HREC Project Number	HRE2020-0119
Project Title	System Quality Attributes on the Intention to Use E-AgriFinance: Perspective of Agricultural Suppliers in Sarawak
Chief Investigator	Dr. Raymond Chiong Choo Wee
Student Researcher	Lim Nyet Kah
Version Number	1
Version Date	01/03/2020

What is the Project about?

This project is to determine the impact of system quality attributes on the intention to use E-AgriFinance platform from the perspective of agricultural suppliers in Sarawak. Respondents are able to voice their opinions on how system quality attributes affect the intention to use E-AgriFinance mobile app through this questionnaire.

Who is doing the Research?

This research is conducted by Lim Nyet Kah, a Masters student in Curtin University, under the supervision of Dr. Raymond Chiong. The results of this research project will be used by Lim Nyet Kah to obtain a Master of Philosophy at Curtin University. This research is supported under the Sarawak Digital Centre of Excellence Grant. No cost is incurred to you and you will not be paid for participating in this research.

Why am I being asked to take part and what will I have to do?

We are looking for respondents who are the suppliers in agricultural sector. Participants would be able to give their opinions through the questionnaire. It will take no more than 20 minutes of your time to complete the questionnaire. Only one attempt is needed to complete the questionnaire. The questionnaire will be collected on the spot once the participant has completed the questionnaire.

Are there any benefits' to being in the research project?

Participant may not gain direct benefit from participating in this research.

Are there any risks, side-effects, discomforts or inconveniences from being in the research project?

There is no foreseeable risk from this research project.

Who will have access to my information?

The information collected in this research will be non-identifiable, it will remain private and confidential. Name of individual is not required and it will be strictly

anonymous. Only the research team has the access to the information collected in this study. In the event of an audit

or investigation, Curtin University Office of Research and Development will have the access to it. However, no one, not even the research team will be able to identify your information. The hard copy data collected from the participants will be in locked storage. The information we collect in this study will be kept under secure conditions at Curtin University for 7 years after the research is published and then it will be destroyed.

Will you tell me the results of the research?

You can obtain the full results by accessing the said platforms if the results of the study are presented at conferences or published in professional journals.

Do I have to take part in the research project?

The participation is voluntary. You have the choice whether to take part or not. You may withdraw from taking part in this pilot study by either not completing the questionnaire form or not returning the questionnaire form to the researcher once you have completed it. You would not be able to withdraw from taking part in the questionnaire once it is submitted to the researcher.

What happens next and who can I contact about the research?

At the start of the study, there is a checkbox to indicate you have understood the information provided here in the information sheet. It also indicates that you agree to take part in this research. Please take your time and ask any questions you have before you decide what to do. For enquiries, please contact Dr Raymond Chiong Choo Wee at raymond.ccw@curtin.edu.my or Ms Lim Nyet Kah at limnk@postgrad.curtin.edu.my

Curtin University Human Research Ethics Committee (HREC) has approved this study (HRE2020-0119). Should you wish to discuss the study with someone not directly involved, in particular, any matters concerning the conduct of the study or your rights as a participant, or you wish to make a confidential complaint, you may contact the Ethics Officer on (08) 9266 9223 or the Manager, Research Integrity on (08) 9266 7093 or email hrec@curtin.edu.au.

Appendix C. Participant Information Sheet (Malay Version)

PERNYATAAN MAKLUMAT PESERTA

Nombor HREC Projek	HRE2020-0119
Tajuk Penyelidikan	Kesediaan Sifat-Sifat Kualiti Sistem Yang Bakal Digunakan Dalam E-Kewangan Pertanian (*E-AgriFinance*): Menurut Perspektif Pembekal Hasil Pertanian Di Sarawak
Ketua Penyelia	Dr. Raymond Chiong Choo Wee
Penyelidik	Lim Nyet Kah
Nombor Versi	1
Tarikh Versi	01/03/2020

Tentang Apakah Projek Penyelidikan Ini?

Penyelidikan ini dilakukan bagi menentukan kesediaan sifat-sifat kualiti sistem yang bakal digunakan dalam E-Kewangan Pertanian yang menjadi perkara penting kepada pembekal sektor pertanian di Sarawak. Responden juga boleh menyatakan pendapat mereka melalui soalan soal selidik yang dikemukakan tentang cara kualiti sistem ini mempengaruhi keinginan untuk menggunakan aplikasi mudah alih E-Kewangan Pertanian.

Siapakah yang menjalankan kajian ini?

Kajian ini telah dijalankan oleh Lim Nyet Kah, seorang pelajar Ijazah Sarjana dari Curtin Universiti Sarawak di bawah penyeliaan Dr. Raymond Chiong. Hasil dari kajian ini kelak akan digunakan oleh Lim Nyet Kah untuk menyelesaikan pengajian dalam bidang Sarjana Falsafah di Universiti Curtin. Penyelidikan ini telah mendapat sokongan di bawah geran yang diperoleh dari Pusat Kecemerlangan Digital Sarawak. Tiada kos yang dikenakan kepada anda untuk menyertai projek ini dan anda juga tidak akan menerima ganjaran berbentuk kewangan jika terlibat dalam kajian ini.

Mengapa saya diminta untuk melibatkan diri dan apa yang patut saya lakukan?

Kami mencari responden dalam kalangan pembekal dalam sektor pertanin. Peserta akan memberi pendapat mereka berdasarkan soalan soal selidik yang dikemukakan. Masa yang diperlukan untuk menjawab soalan soal selidik ini sekitar 20 minit sahaja. Setiap orang hanya perlu menjawab satu set borang soal selidik sahaja. Soalan soal selidik yang telah siap dijawab akan terus dikutip daripada peserta pada masa itu juga.

Apakah ada apa-apa faedah yang diperoleh daripada projek penyelidikan ini?

Peserta mungkin tidak akan mendapat manfaat segera daripada penyertaan dalam projek ini.

Apakah ada apa-apa risiko, kesan sampingan atau ketidakselesaan daripada penyertaan dalam projek penyelidikan ini?

Tiada kesan yang boleh diramal setakat ini sekiranya terlibat dalam projek penyelidikan ini.

Siapa yang akan akses kepada maklumat yang saya beri?

Segala informasi yang dikumpul melalui penyelidikan ini tidak akan dikenalpasti identiti pemiliknya dan akan kekal sulit dan peribadi. Nama pemaklum tidak didedahkan dan akan kekal tanpa nama. Hanya pasukan penyelidik sahaja akan akses kepada maklumat yang dikumpul dalam kajian ini. Untuk tujuan audit atau penyiasatan,hanya pegawai penyelidikan dan Pembangunan Universiti Curtin sahaja yang akan akses kepada kajian tersebut. Bagaimanapun tiada sesiapa pun termasuk kumpulan pengkaji yang dapat mengenalpasti informasi anda. Salinan bercetak data yang telah dikumpul ini akan disimpan dalam peti penyimpanan berkunci. Maklumat yang kami kumpul untuk tujuan kajian ini akan disimpan di tempat yang selamat di Universiti Curtin selama 7 tahun selepas kajian ini diterbitkan kemudian baharulah dilupuskan.

Adakah anda akan memaklumkan kepada saya hasil penyelidikan ini kelak?

Anda boleh mendapatkan keputusan penuh dengan mengakses platform berkenaan kalau keputusan kajian ini dibentangkan semasa konfrensi atau jika penyelidikan ini disiarkan melalui jurnal profesional.

Adakah saya perlu megambil bahagian dalam projek penyelidikan ini?

Pengelibatan anda adalah secara sukarela. Anda boleh memilih untuk menjadi peserta atau tidak. Anda boleh menarik diri dari terlibat dalam projek ini sama ada dengan tidak melengkapkan borang soal selidik atau tidak mengembalikan borang soal selidik yang telah dilengkap isi kepada pengkaji. Anda tidak boleh menarik diri dari terlibat dalam projek ini jika boring soal selidik telah dihantar kepada pengkaji.

Apakah tindakan yang seterusnya dan siapa yang saya boleh hubungi untuk pertanyaan lanjut berkenaan penyelidikan ini?

Pada peringkat awal projek ini, terdapat kotak senarai semak untuk membantu anda memahami maklumat yang disediakan dalam helaian maklumat. Ini akan menjadi petunjuk yang anda bersetuju mengambil bahagian dalam penyelidikan ini. Sila ambil sedikit masa untuk bertanyakan soalan sebelum anda membuat keputusan untuk tindakan yang seterusnya. Jika ada sebarang pertanyaan, sila hubungi Dr Raymond Chiong Choo Wee di alamat email raymond.ccw@curtin.edu.my atau Cik Lim Nyet Kah limnk@postgrad.curtin.edu.my.

Komiti Etika Penyelidikan Kemanusiaan (HREC) telah meluluskan kajian ini (HRE2020-0119). Sekiranya anda ingin berbincang tentang kajian ini dengan seseorang yang tidak terlibat secara langsung, khususnya apa-apa perkara yang berkaitan dengan perlaksanan kajian atau hak-hak anda sebagai peserta (responden) atau anda ingin membuat sebarang aduan, sila hubungi Pegawai Etika di talian (08) 9266 9223 atau Pengurus, Intergriti Penyelidikan di talian (08) 9266 7093 atau hantar email kepada hrec@curtin.edu.au.

Appendix D. Participant Information Sheet (Chinese Version)

受访者信息声明

HREC 项目编号	HRE2020-0119
项目名称	影响使用电子农业融资（E-AgriFinance）意愿的系统质量属性：砂拉越农业供应商的观点
首席研究员	Dr. Raymond Chiong Choo Wee
学生研究员	Lim Nyet Kah
版本号	1
版本日期	01/03/2020

这是什么研究项目？

此研究项目将从砂捞越州的农业供应商的角度确定系统质量属性对使用 E-AgriFinance 平台的意愿的影响。通过此问卷，受访者可以就系统质量属性如何影响他们使用 E-AgriFinance 移动应用程序的意愿发表意见。

研究人员是谁？

这项研究是由科廷大学的研究生 Lim Nyet Kah 在 Raymond Chiong 博士的指导下进行的。 Lim Nyet Kah 将使用该研究项目的结果来获得科廷大学的哲学硕士学位。该研究得到砂拉越数字中心卓越补助金（Sarawak Digital Centre of Excellence Grant）的辅助。不会让您承担任何费用，也不会因就此试点调查而向您付款。

我为何受邀参与？我该如何做？

我们正在寻找作为农业部门供应商的受访者。受访者将能够通过调查表发表自己的意见。完成试点调查的时间不会超过 20 分钟。只需一次即可完成问卷。受访者完成问卷后，我方将立即收集问卷。

成为研究项目的受访者有什么好处？

受访者可能无法从参与此试点调查中获得直接收益。

参与研究项目是否有任何风险、副作用、造成不适或不便之处？

此试点调查没有可预见的风险。

谁可以接触我的信息？

本研究中收集的信息将无法被识别，且将保密。受访者的名称不被记录在案，并且将确保是匿名的。只有研究团队才能访问此研究中收集的信息。如果进行审核或调查，则科廷大学研究与发展办公室将有权使用它。但是，没有人，甚至研究团队都无法识别您的信息。从参与者那里收集的纸质数据将被保存在上锁的存储器中。研究发表后，

我们在这项研究中收集的信息将在安全的条件下保存在科廷大学 7 年，然后再将其销毁。

您会告诉我研究结果吗？

从初步研究中获得的结果不用于分析目的。

如果研究结果在会议上发表或在专业期刊上发表，您可以通过访问上述平台来获得完整结果。

我必须参加此研究项目吗？

参加是自愿的。您可以选择是否参加。您可以通过不填写调查表或在完成调查表后不将调查表退还给研究人员来退出此试验研究。

接下来会发生什么事？关于此研究项目，我可以联系谁？

在试点研究开始时，会有一个复选框，勾选此项表明您已了解信息表中此处提供的信息，这也表示您同意参与这项研究。 在决定要做什么之前，请花点时间询问您觉得疑惑的问题。 如有疑问，请通过 raymond.ccw@curtin.edu.my 与 Raymond Chiong Choo Wee 博士联系，或通过 limnk@postgrad.curtin.edu.my 与 Lim Nyet Kah 女士联系。

科廷大学人类研究伦理委员会（HREC）已批准这项研究（HRE2020-0119）。 如果您希望与没有直接关系的人讨论研究，尤其是有关研究行为或您作为参与者的权利的任何事项，或者希望进行机密投诉，则可以致电（08）9266 9223 与道德操守官联系或（08）9266 7093 接洽研究完整性经理或发送电子邮件至 hrec@curtin.edu.au。

Appendix E. Questionnaire (English Version)

System Quality Attributes on the Intention to Use E-AgriFinance: Perspective of Agricultural Suppliers in Sarawak

Please read the following and tick if you agree.

□ I have received information regarding this research. I believe I understand the purpose, extent and possible risks of my involvement in this project. I voluntarily consent to take part.

Please fill up the following section by crossing (X) in each question.

1. Do you have internet connection at your workplace?
   □ Yes □ No

2. Which of the following mobile network technology are you using?
   □ 3G □ 4G □ No connection

3. What type of community is your current workplace?
   □ Rural □ Urban

Please circle one number (e.g. 1,2,3,4 or 5) in each question. Please be reminded the questions answered are based on the E-AgriFinance mobile application in Sarawak.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I would find E-AgriFinance app useful in my business activities.	1	2	3	4	5
2. Using E-AgriFinance mobile app would help in achieving tasks that are important to me.	1	2	3	4	5
3. Using E-AgriFinance mobile app would enable me to accomplish tasks more quickly.	1	2	3	4	5
4. Using E-AgriFinance mobile app would increase my productivity.	1	2	3	4	5
5. Using E-AgriFinance mobile app	1	2	3	4	5

would enhance my effectiveness on my business activities.					
6. I would find E-AgriFinance mobile app easy to use.	1	2	3	4	5
7. It would be easy for me to become skilful at using E-AgriFinance mobile app.	1	2	3	4	5
8. My interaction with E-AgriFinance mobile app would be clear and understandable.	1	2	3	4	5
9. I would find it easy to get E-AgriFinance mobile app to do what I want it to do.	1	2	3	4	5
10. Learning to operate E-AgriFinance mobile app would be easy for me.	1	2	3	4	5
11. I would feel safe providing personal	1	2	3	4	5

privacy information over the E-AgriFinance mobile app.					
12. I am not worried to use E-AgriFinance mobile app for financial transactions as I know it would be safe and secured.	1	2	3	4	5
13. I would feel secure sending sensitive information across the E-AgriFinance mobile app.	1	2	3	4	5
14. I feel my information will not divulge to third party.	1	2	3	4	5
15. I feel the E-AgriFinance mobile app is safe to use.	1	2	3	4	5
16.I would use this E-AgriFinance mobile app because it has the ability to handle error.	1	2	3	4	5

17. I would use this E-AgriFinance mobile app because it has the ability to resume functioning in the event of an error.	1	2	3	4	5
18. I would use this E-AgriFinance mobile app because this platform can be used efficiently after a modification.	1	2	3	4	5
19. I would use this E-AgriFinance mobile app because this platform integrates easily with new systems.	1	2	3	4	5
20. I would use this E-AgriFinance mobile app because little effort is needed to locate causes of	1	2	3	4	5

failure in the platform.					
21.I intend to use E-AgriFinance mobile app in the future.	1	2	3	4	5
22. I would try to use E-AgriFinance mobile app in my work place.	1	2	3	4	5
23. I predict I would use E-AgriFinance mobile app in the days to come.	1	2	3	4	5
24. I plan to use E-AgriFinance mobile app frequently.	1	2	3	4	5
25. I will not hesitate to try out new E-AgriFinance mobile app.	1	2	3	4	5
26.I can access ICT infrastructure easily.	1	2	3	4	5
27. I feel comfortable in getting access to ICT infrastructure.	1	2	3	4	5
28. I think the ICT infrastructure	1	2	3	4	5

in my residing town is readily accessible.					
29. I think the internet coverage in my residing town is wide.	1	2	3	4	5
30. I think the availability of ICT infrastructure in my residing town is high.	1	2	3	4	5

If you have any comments regarding the E-AgriFinance mobile app, please write them below.

Thank you

Thank you for your participation. If you have additional questions about this survey, do not hesitate to email limnk@postgrad.curtin.edu.my

Demographics

Please fill up the following section by crossing (X) in each question.

1. Gender

   □ Male □ Female

2. Age (years old)

   □ 18-30 □ 31-40 □ 41-50

   □ 51-60 □ Above 60

3. Please indicate your prior experience in using mobile app in general (months)

   □ <6 □ 6-12 □ 12-24 □ >24

4. Please indicate the highest level of education you have completed

   □ Primary School □ High School □ Diploma

   □ Bachelor's Degree □ Master's Degree □ PhD

   □ Others (Please Specify) _____

Appendix F. Questionnaire (Malay Version)

Soalan Soal Selidik Kajian Perintis

Kesediaan Sifat-sifat Kualiti Sistem Yang Bakal Digunakan Dalam E-Kewangan Pertanian (*E-AgriFinance*): Menurut Perspektif Pembekal Hasil Pertanian Di Sarawak

Baca arahan berikut kemudian letak tanda semak (√) jika anda bersetuju dengan pernyataan tersebut :

□ saya sudah menerima maklumat berkenaan penyelidikan ini. Saya telah memahami tujuan, jangkaan dan risiko penglibatan saya dalam projek ini. Saya bersetuju mengambil bahagian secara sukarela.

Sila isi bahagian ini dengan menanda pangkah (X) pada setiap soalan.

1. Adakah di tempat kerja anda mempunyai capaian internet?
   □ Ya □ Tidak

2. Rangkaian teknologi mudah alih yang manakah yang anda gunakan sekarang?
   □ 3G □ 4G □ tiada

3. Apakah jenis komuniti yang ada di tempat kerja anda sekarang?
   □ Luar bandar □ Bandar

Sila bulatkan satu nombor (1,2,3,4 atau 5) pada setiap soalan. Soalan yang dikemukakan berkisar tentang penggunaan aplikasi mudah alih E-kewangan pertanian di Sarawak.

	Sangat tidak bersetuju	Tidak bersetuju	Neutral	Bersetuju	Sangat bersetuju
1. Saya mendapati aplikasi E-Kewangan Pertanian sangat berguna dalam urusan perniagaan saya.	1	2	3	4	5
2. Penggunaan aplikasi mudah alih E-Kewangan Pertanian membantu menyelesaikan tugasan yang mana perkara ini sangat penting pada saya.	1	2	3	4	5
3. Penggunaan aplikasi mudah alih E-Kewangan Pertanian akan	1	2	3	4	5

membolehkan saya menyelesaikan tugasan dengan lebih cepat.					
4. Penggunaan aplikasi mudah alih E-Kewangan Pertanian membantu saya meningkatkan pengeluaran.	1	2	3	4	5
5. Penggunaan aplikasi mudah alih meningkatkan keberkesanan saya dalam aktiviti perniagaan.	1	2	3	4	5
6. Saya mendapati aplikasi mudah alih E-Kewangan Pertanian mudah digunakan	1	2	3	4	5
7. Adalah mudah bagi saya menjadi lebih mahir menggunakan aplikasi mudah alih e-	1	2	3	4	5

Kewangan pertanian.					
8. Interaksi saya lebih jelas dan mudah difahami dengan menggunakan aplikasi mudah alih E-Kewangan Pertanian.	1	2	3	4	5
9. Saya mendapati mudah untuk melakukan apa sahaja yang ingin dilakukan menggunakan e-Kewangan Pertanian.	1	2	3	4	5
10. Mempelajari cara mengendalikan aplikasi mudah alih E-Kewangan adalah lebih mudah pada saya.	1	2	3	4	5
11. Saya berasa lebih selamat memberikan makumat privasi peribadi	1	2	3	4	5

melalui aplikasi mudah alih E-Kewangan Pertanian.					
12. Saya tidak risau menggunakan aplikasi mudah alih E-Kewangan Pertanian dalam urusan transaksi kewangan kerana urusannya selamat dan terkawal	1	2	3	4	5
13. Saya berasa selamat mengirim maklumat sensitive melalui aplikasi mudah alih E-Kewangan Pertanian.	1	2	3	4	5
14. Saya rasa maklumat saya tidak akan didedahkan kepada pihak ketiga.	1	2	3	4	5

15. Saya rasa aplikasi mudah alih E-Kewangan Pertanian mudah digunakan.	1	2	3	4	5
16. Saya akan menggunakan aplikasi mudah alih E-Kewangan Pertanian kerana aplikasi ini mampu mengendalikan sebarang kesilapan.	1	2	3	4	5
17. Saya akan menggunakan E-Kewangan Pertanian kerana keupayaannya untuk menyambung semula fungsinya sekiranya terjadi kesilapan dalam urusan.	1	2	3	4	5
18. Saya akan menggunakan	1	2	3	4	5

aplikasi mudah alih E-Kewangan Pertanian kerana platform ini dapat digunakan dengan cekap walaupun selepas dilakukan pengubahsuaian.					
19. Saya akan menggunakan aplikasi mudah alih E-Kewangan Pertanian kerana platform ini mudah diintergrasikan dengan sistem baharu.	1	2	3	4	5
20. Saya akan menggunakan aplikasi mudah alih E-Kewangan Pertanian kerana hanya perlukan sedikit usaha untuk mencari punca	1	2	3	4	5

kegagalan dalam platform.					
21. Saya berhasrat menggunakan aplikasi mudah alih E-Kewangan Pertanian pada masa hadapan.	1	2	3	4	5
22. Saya berusaha untuk menggunakan aplikasi mudah alih E-Kewangan Pertanian di tempat kerja saya.	1	2	3	4	5
23. Saya menjangkakan akan menggunakan E-Kewangan Pertanian dalam masa terdekat.	1	2	3	4	5
24. Saya merancang untuk menggunakan aplikasi mudah alih E-Kewangan Pertanian	1	2	3	4	5

dengan lebih kerap.					
25. Saya tidak akan teragak-agak untuk mencuba menggunakan aplikasi mudah alih E-AgriFinance.	1	2	3	4	5
26. Saya boleh akses kepada infrastruktur ICT dengan mudah.	1	2	3	4	5
27. I feel comfortable in getting access to ICT infrastructure	1	2	3	4	5
28. Saya berpendapat infrastruktur ICT di bandar tempat saya tinggal mudah diakses.	1	2	3	4	5
29. Saya berpendapat capaian internet sudah meluas di bandar tempat saya tinggal.	1	2	3	4	5
30. Saya berpendapat tahap	1	2	3	4	5

kesediaan infrastruktur ICT di bandar tempat saya tinggal pada tahap yang tinggi.					

Sekiranya anda ada komen berkenaan aplikasi mudah alih E-Kewangan Pertanian sila nyatakan di ruangan di bawah:

Terima kasih

Terima kasih atas penglibatan anda. Sekiranya anda ada sebarang kemusykilan terhadap kajian ini, sila ajukan pertanyaan anda ke e-mail limnk@postgrad.curtin.edu.my

Demografi

Lengkapkan maklumat di bawah dengan menandakan pangkah (X) pada setiap soalan.

1. Jantina

   □ Lelaki □ Perempuan

2. Umur

   □ 18-30 □ 31-40 □ 41-50

   □ 51-60 □ 60 ke atas

3. Sila tandakan tempoh anda telah menggunakan aplikasi mudah alih (bulan)

   □ <6 □ 6-12 □ 12-24 □ >24

4. Tahap persekolahan tertinggi anda

   □ Sekolah rendah □ Sekolah menengah □ Diploma

   □ Ijazah □ Ijazah Sarjana □ PhD

   □ Lain-lain (nyatakan) _____

Appendix G. Questionnaire (Chinese Version)

问卷调查

影响使用电子农业融资（E-AgriFinance）意愿的系统质量属性：砂拉越农业供应商的观点

请阅读以下内容，如果同意，请勾选。

□ 我已经收到有关这项研究的信息。 我了解参与此项目的目的、范围和可能存在的风险。 我自愿同意参加此项调查。

请在回答下列问题时，用叉号（X）填写。

1. 您的工作场所有互联网连接吗？
   □ 有　　□ 否

2. 您正在使用以下哪种移动网络科技？
   □ 3G　　□ 4G　　□ 无网络

3. 您目前的工作场所是处于哪种类型的社区？
   □ 郊区　　□ 市区

请在每个问题中圈出一个数字（例如 1,2,3,4 或 5）。 请注意，回答的问题基于砂拉越的 E-AgriFinance 移动应用程序。

	非常不同意	不同意	无意见	同意	非常同意
1. 我发现 E-AgriFinance 应用程序在我的商业活动中很有用。	1	2	3	4	5
2. 使用 E-AgriFinance 移动应用程序将有助于完成对我来说很重要的任务。	1	2	3	4	5
3. 使用 E-AgriFinance 移动应用程序可以使我更快地完成任务。	1	2	3	4	5
4. 使用 E-AgriFinance 移动应用程序可以提高我的生产力。	1	2	3	4	5
5. 使用 E-AgriFinance 移动应用程序可以提高我在业务活动中的效率。	1	2	3	4	5
6. 我发现 E-AgriFinance 移动应用程序易于使用。	1	2	3	4	5
7. 我很容易掌握使用 E-AgriFinance 移动应用程序的技巧。	1	2	3	4	5
8. 我与 E-AgriFinance 移动应用程序的互动清晰易懂。	1	2	3	4	5
9. 我发现 E-AgriFinance 移动应用程序能轻松地完成我想做的事情。	1	2	3	4	5
10. 学习如何操作 E-AgriFinance 移动应用	1	2	3	4	5

程序对我来说很容易。					
11. 我认为通过 E-AgriFinance 移动应用程序提供个人隐私信息会很安全。	1	2	3	4	5
12. 我不担心使用 E-AgriFinance 移动应用程序进行金融交易，因为我知道这将是安全的。	1	2	3	4	5
13. 我觉得通过 E-AgriFinance 移动应用程序发送敏感信息很安全。	1	2	3	4	5
14. 我觉得我的信息不会泄露给第三方。	1	2	3	4	5
15. 我觉得 E-AgriFinance 移动应用程序时可以安全使用的。	1	2	3	4	5
16. 我会使用此 E-AgriFinance 移动应用程序，因为它可以处理错误。	1	2	3	4	5
17. 我会使用此 E-AgriFinance 移动应用程序，因为它能够在发生错误时恢复运行。	1	2	3	4	5
18. 我会使用此 E-AgriFinance 移动应用程序，因为在作出修改后，仍可以有效使地用该平台。	1	2	3	4	5
19. 我会使用此 E-AgriFinance 移动应用	1	2	3	4	5

程序，因为该平台可轻松与新系统整合。					
20. 我会使用此 E-AgriFinance 移动应用程序，因为只需花费很少的精力即可确定平台故障的原因。	1	2	3	4	5
21. 我未来有意使用 E-AgriFinance 移动应用程序。	1	2	3	4	5
22. 我会在工作场所尝试使用 E-AgriFinance 移动应用程序。	1	2	3	4	5
23. 我预计在未来几天会使用 E-AgriFinance 移动应用程序。	1	2	3	4	5
24. 我计划经常使用 E-AgriFinance 移动应用程序。	1	2	3	4	5
25. 我会毫不犹豫地试用新的 E-AgriFinance 移动应用程序。	1	2	3	4	5
26. 我可以轻松访问信息通信科技（ICT）基础设施。	1	2	3	4	5
27. 我可以轻松使用 ICT 基础设施。	1	2	3	4	5
28. 我认为在我所居住的城镇上的 ICT 基础设施随时可用。	1	2	3	4	5
29. 我认为我居住的城镇的互联网覆盖范围很广。	1	2	3	4	5
30. 我认为我所居住的城镇的 ICT 基础设施可用性很高。	1	2	3	4	5

如果您对 E-AgriFinance 移动应用有任何评论，请在下面写下。

谢谢

感谢您的参与。 如果您对此调查还有其他疑问，请随时发送电子邮件至 limnk@postgrad.curtin.edu.my。

受访者资料

请在回答下列问题时，用叉号（X）填写。

1. 性别

   □ 男　　□ 女

2. 年龄 (岁)

   □ 18-30　　□ 31-40　　□ 41-50

   □ 51-60　　□ 60 以上

3. 请表明您以前使用移动应用程序的经验（月）

   □ <6　　□ 6-12 □ 12-24　　□ >24

4. 请表明您已完成的最高学历

   □ 小学　　□ 中学　　□ 文凭

   □ 学士学位　□ 硕士学位　　□ 博士学位

   □ 其他 (请说明) _____